Infantry

SCHOOL QUARTERLY

Staff Study
Reserve
1954-55
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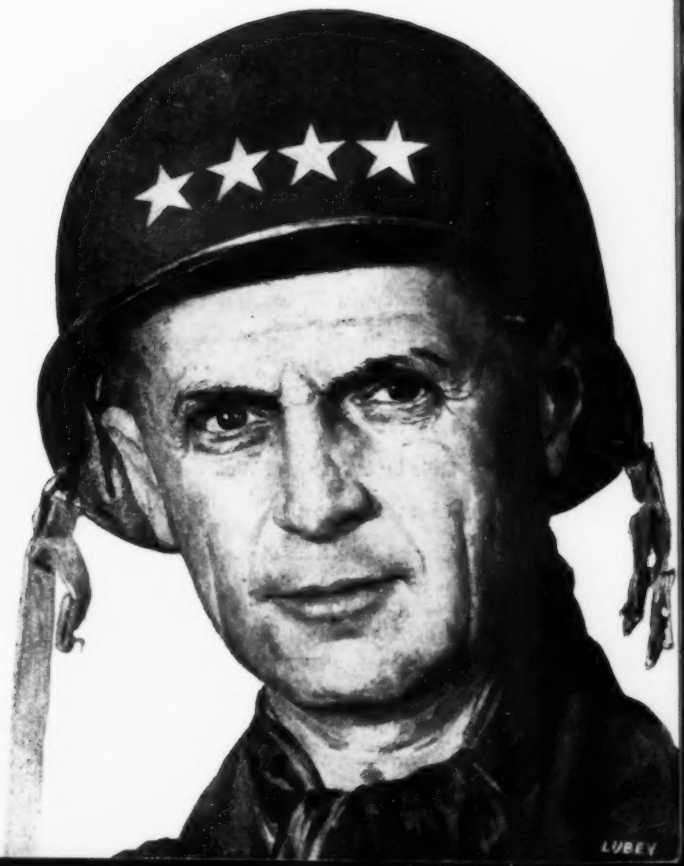
the magazine for Infantrymen



January
1954

THE INFANTRY SCHOOL QUARTERLY

JANUARY 1954

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L QUARTERLY

Vol. 44 No. 1

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LETTERS TO THE EDITOR

WE'RE FLATTERED!

Dear Sir:

. . . I only discovered THE INFANTRY SCHOOL QUARTERLY when I went to school last year. In my opinion you have an excellent magazine, better by far for the NCO and Junior Officer than any other military publication. Why is there not close command support for the *Quarterly*?

Here's hoping for increased circulation and a consequent boom in professional interest.

Loren S. Gannon, Jr.
2d Lt, Infantry
902 Brown St.
St. Clair, Michigan

✕ Thank you, Lieutenant! We're happy to report that as a result of a recent circulation drive in Infantry units we are receiving very favorable command support. (Notice the "Star Unit" feature in this issue.) We hope it will continue. As more Infantrymen "discover" the QUARTERLY, we're confident there will be a boom in professional interest.

— Editor

Dear Sir:

I believe the QUARTERLY is the most informative and helpful guide for any and all servicemen, regardless of their rank or branch of service.

Lionel Barnet
Lt, Infantry
39th Regt, 9th Inf Div
Fort Dix, N. J.

✕ Right! Although the QUARTERLY is written primarily for Infantrymen, it is designed to be of benefit to members of all branches. We, too, feel the QUARTERLY is a must in a soldier's library of military information.

— Editor

Dear Sir:

During my three years as the Senior Infantry ROTC Instructor at VMI, I found the QUARTERLY of almost incalculable value to me in the preparation of a large part of the Infantry instruction presented in my classes. I thought this should be brought to the attention of QUARTERLY readers, especially those on ROTC duty.

. . . as a matter of fact, I used to bring the QUARTERLY to the attention of my classes and suggest they subscribe.

Leslie W. Bailey
Lt Col, Infantry
The Infantry School

✕ Thanks! Colonel Bailey's remarks point up one of the things we have said many times and again repeat — there is practically no limit to the many ways in which the QUARTERLY can help Infantrymen.

— Editor

AEC AND THE QUARTERLY

Dear Sir:

I am enclosing a check for a year's renewal of my subscription to the QUARTERLY.

I have recently become separated

JORDAN

from active duty and am interested in taking your Series No. 20 correspondence course. I completed the Series No. 10 as an Officer Candidate at The Infantry School and am now a 1st Lieutenant in the USAR.

If you would send me any information you have on this and other similar courses, I would be very appreciative.

Marshall L. Wolf
1st Lt, Infantry
Bayberry Point
Islip, Long Island, New York

✕ Although we do not handle Army Extension Courses in this Office, we immediately contacted the proper agency here at The Infantry School and obtained the desired information and forms needed by Lt Wolf. The material was forwarded within a few days after his letter was received.

Letters from our readers indicate considerable interest in Army Extension Courses. If you are interested, here's what you must do to enroll:

a. If you are a reserve officer on inactive status:
   1. Contact your military advisor and get three copies of D/A AGO Form 145.
   2. Fill out Form 145 in triplicate.
   3. Have it endorsed by your military advisor.
   4. Once endorsed, your military advisor will mail it to:
      The Commandant
      The Infantry School
      Fort Benning, Georgia
      ATTN: Director, Dept of Non-Resident Instruction
   5. If you want to enroll, for example, in an Army Extension Course which is under the jurisdiction of The Artillery School, the procedure outlined above applies. In such a case your branch school will determine the appropriateness of your request. If approved it will be forwarded to the proper school.

b. If you are an officer on active duty (Regular, National Guard or Reserve) you do the following:
   1. Obtain D/A AGO Form 145 from your regimental or separate unit headquarters.
   2. Fill out Form 145 in triplicate.
   3. Submit Form 145 for the approval of your regimental or separate unit commander. Once endorsed he will forward it to the address listed in a4 above.
   4. See a5.

c. Any officer on extended active duty may enroll in any subcourse or series given by any branch Army Extension Course.

d. If you are a warrant officer or enlisted man on inactive status see a above. If you are on active duty see b above. However, you must first successfully complete the 10 Series of your branch before applying for other Army Extension Courses. The 10 Series is administered by:
   The Commandant
   Fort Riley, Kansas
   ATTN: Director, Army Extension Course

e. If you want an Army Extension Course catalogue, contact either your local military advisor, unit CO, if you are on Extended Active Duty or Regular Army, or write to the address given in a4.

— *Editor*

CORRECTION

Dear Sir:

. . . read "Fire Power Plus" in the October QUARTERLY with great interest, but I believe I have caught you in error. The new heavy machine gun mount is referred to once in the article as the M27 and in a different place as the M73. Isn't the correct designation of the mount pictured the Mount, Tripod, Weapon, M74?

Paul F. Roberts
Lt Col, Inf
Weapons Department
The Infantry School

✕ Colonel Roberts is correct. We regret to say that the QUARTERLY slipped up here. The heavy machine gun is mounted on the new Mount, Tripod, Weapon, M74.

Address all letters to: The Editor, INFANTRY SCHOOL QUARTERLY, Publications and Visual Aids Office, The Infantry School, Fort Benning, Georgia.

Editor's Page

Dear Reader:

Take 522 cubic feet of zinc and lead, 2½ tons of paper and 100 pounds of ink. There, roughly, you have the ingredients that went into printing the magazine you are holding in your hands. These ingredients the printer furnished.

The main ingredients, though, come from you. These ingredients are the articles—the backbone of the Quarterly. Just as the printer combines zinc, lead, paper and ink into a pleasant-looking magazine, we are always attempting to gather the ideas of soldier-writers into articles that will hold your interest and at the same time keep you up-to-date on what's going on in the Infantry today.

Right now the Quarterly hunting season is on for articles concerning all phases of Infantry activity—small unit action, new training aids or any trick-of-the-trade you've discovered that will help your fellow Infantryman get along better in training troops or in employing a platoon, company or regiment more effectively in combat.

If you've been a reader of the Quarterly, we know you've picked up some valuable ideas from these pages. Now it's your turn to pass along some of your ideas.

You don't have to be a Hemingway or a Mickey Spillane to write for the Quarterly. Naturally, we like well-written articles, but the main thing we are after are the ideas which, with some polishing and perhaps a little re-writing, will be turned into an A-1 story.

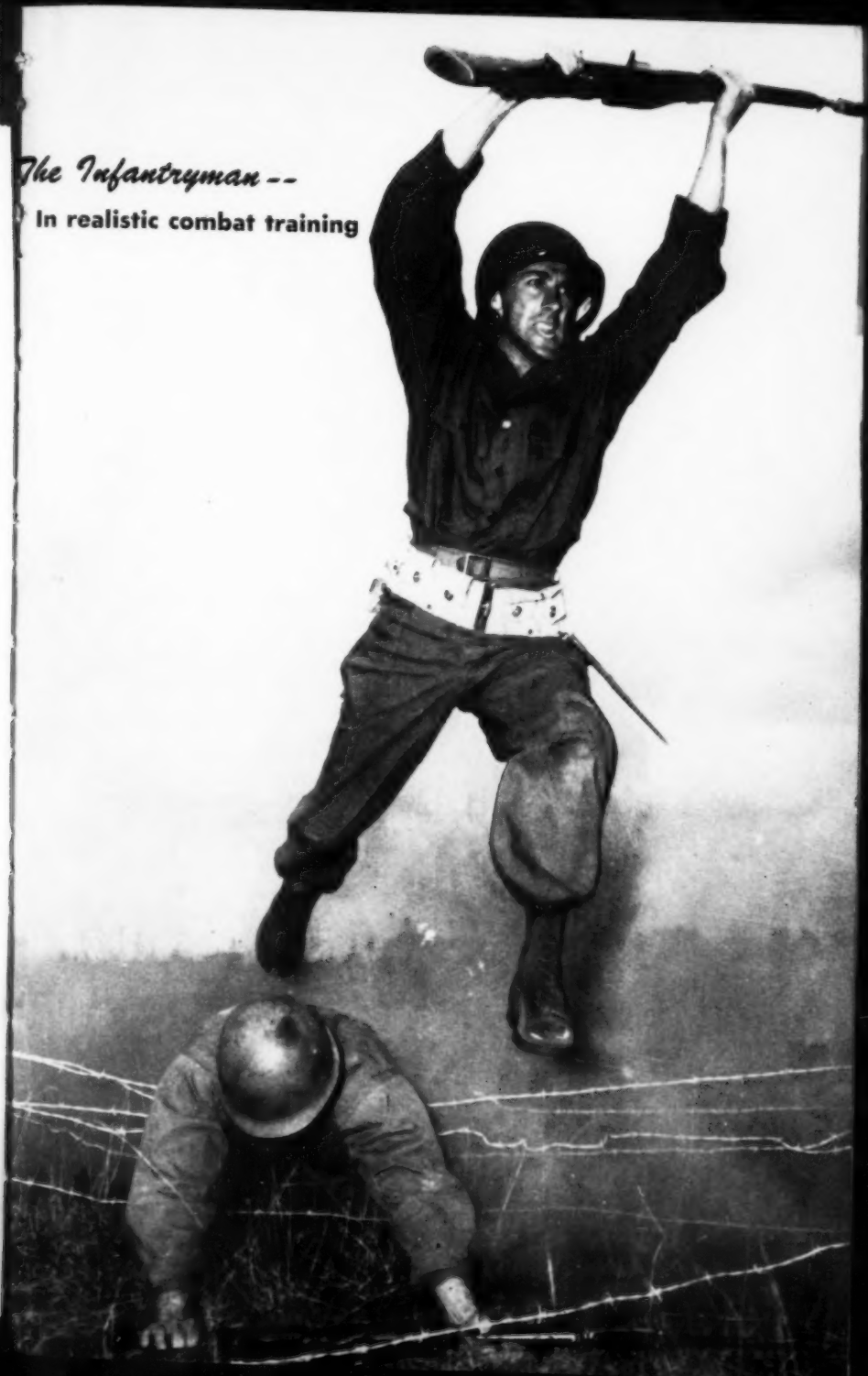
As a little incentive-reminder, we might add that we pay for manuscripts accepted for publication.

The Editor

P.S. If you can't use the inclosed subscription card, how about passing it along to someone else. He'll appreciate it.

The Infantryman --

In realistic combat training



General Ridgway Speaks...

Two days after he became Army Chief of Staff, General Matthew B. Ridgway met with the Army Staff. The editor of the QUARTERLY *believes that the following remarks, made by General Ridgway at that meeting, are of great interest to all Infantrymen.*

IN ANALYZING my thoughts for expression at this meeting, I came to the conclusion that the most important point, I believe the one uppermost in my mind, was:

Recognition of the limitless opportunity for purposeful service.

I believe every one of you subscribes to the criterion that there is some purpose beyond the powers of humans to discern for which we were put on this earth. For my part, I subscribe to that fully, and I believe that the greatest purpose which we are permitted to see is to serve others. I believe it is no platitude to say that never have the objectives of higher purposes been in greater need of service from men and women of high-principled integrity than the purposes for which the founding fathers established this Nation. I believe that never has this Nation, and the cause of free-

As Commander of the 8th Army, General Ridgway inspects units of the

"I am . . . confident in America's Future"

dom of which it is today the pre-eminent leader, been in greater need of such service. . . .

Now we join to share service together of the broadest scope and of the highest plane, and as I join you, I want you to know of my profound respect for the service you have been rendering and to express the earnest hope that together we can render still better service.

I have known each of you for years, some more intimately than others, but all with a sufficient knowledge of your conspicuously superior records to appreciate them fully.

Some of the things I shall say will touch upon matters which, at this initial stage of our teamwork, I think are of sufficient importance, either as basic principles or as indications of my working methods and line of thinking, to bring to your attention.

In the first approach to my job, regardless of magnitude, my mind follows a certain sequence of steps.

First, there is a *MISSION*.

Second, this MISSION breaks down into certain *FUNCTIONS* to be performed, in order to accomplish the MISSION.

Third, there must be a sound, simple, positive, workable *ORGANIZATION* for the performance of these functions.

United Nations forces fighting in the Korean conflict.

Fourth, *MEN* of the proper caliber must be selected and assigned, each in his proper place, to this ORGANIZATION.

Fifth, the ORGANIZATION as a team must then *PERFORM* its FUNCTIONS and *ACCOMPLISH* its assigned mission, and

Finally, the execution or PERFORMANCE must have that vital essential at all times and at all stages of *COMMAND SUPERVISION*. . . .

I shall not try, on this occasion, to state the Army's missions in detailed form, but I do wish to recall to your mind that however you word the Army's mission, there is but one final criterion by which to judge what the mission was and the manner of its performance. That criterion, gentlemen, is success in battle — success and all that it contributes in battle to the Nation's military team.

The modern state and its government, particularly our own, is about the most complex organization yet developed on earth. In the formulation of its policies and in their execution, the main fields, such as the political, economic, financial, social, and military, are inseparably inter-dependent. No one field can any longer be isolated and major decisions in it made without regard to one or more of the others.

Yet, and I think this is basic — at least it is in my way of thinking — the responsibility of the professional military man lies in the professional military field. His over-riding responsibility is to give his honest, objective, professional military advice to those civilians who by our Constitution are his Commanders. It is not his responsibility to decide whether the military means which he determines are the minimum essential to accomplish the military task assigned him will cost more than the Nation can afford. He has not been trained for that. It is not, I submit, within his field of responsibility. He must, of course, as every senior commander is today, be aware of the major factors in these other major fields. He must recognize, as every senior commander does today, the imperative necessity of maximum economy and efficiency in the utilization of whatever military means his Government may make available to him. There is no question of this any more than there is any question of the loyalty of these senior officers in carrying out the decisions announced to them by proper civilian authority.

The point I wish to make here, and I repeat it for emphasis, is that the professional military man has three primary responsibilities:

First, to give his honest, fearless, objective, professional military opinion of what he needs to do the job the Nation gives him.

Second, if what he is given is less than the minimum he regards as essential, to give his superiors an honest, fearless, objective opinion of the consequences, as he sees them from the military viewpoint, of this shortage, and

Third, and finally, he has the duty, whatever be the final decision, to do the utmost with whatever he is furnished.

Now let me return to what I was talking about a moment ago, namely, our over-riding mission.

The Army's peace-time successes, however numerous, are secondary in importance to this one overriding vital requirement — it must win in war.

Now there are certain simple essentials by which it can and will win in war.

In simplest terms, these are MEN, MONEY and MORALE, or, since we don't control the acquisition of money, these essentials are:

First — arms and equipment.

Second — training.

Third — leadership.

None of these needs much explanation to you, and the first doesn't need much explanation to the American people. I think they recognize pretty well that the days of club and sling, of spear and ax have passed, and that no Army or military force today can expect success in battle if insufficiently or inadequately armed, no matter how well trained or how well led.

The other two basic elements need a lot of continuing explanation to our people, and one of them at least, LEADERSHIP, needs a lot of continuing study by ourselves.

Now, developing the thought a little from these last two elements, TRAINING AND LEADERSHIP, two basic requirements stand out.

First, foremost, and always, we must have an Officer Corps, comprising a professional, long-term cadre adequate both in size and in quality. This is the heart and soul of any military organization. None will ever be better, or even quite as good, as its Officer Corps. This is the great reservoir of the character, of devotion to duty, of loyalty, of professional competence — the fountain-head by which tradition is planted and nourished.

If we are to have this, and without it we do not have an Army, we must have represented in our professional officer cadre a cross-section of the Nation's life, a fair share of the best the Nation produces in character, in intellect, and in culture. If we do not, if it is not representative of a cross-section of America, it will not, in the long-run, have that support of the American people which it must have to accomplish its ultimate mission.

Next, and closely after the Officer

The General leaves Taegu, Korea, for Tokyo to accept his assignment as Commander in Chief, Far East.

General Ridgway, as SHAPE Commander, inspects French units of the NATO forces.

Corps, is the requirement for the Noncommissioned Officer Corps, with its professional cadre of career personnel, inspired by the precepts of the Officer Corps whose standards it emulates.

These, gentlemen, are the essentials with which leadership can accomplish the seemingly impossible. These are the essentials without which ultimate success is impossible. These are the elements to which I invite your attention, and which I suggest we, all of us, keep before our eyes, however numerous the distractions of our day to day concerns.

With these two instruments with which to work, an Officer and a Noncommissioned Officer Corps of proper quality and adequate size, we can then be confident that the young men and women of America turned over to us to train will receive the best in professional, physical, and spiritual education that it is possible to provide.

This brings me to the last of the major generalizations which I wish to make in this talk this morning: That is, the Officer and Enlisted Man relationship.

When we were young officers, we served a long apprenticeship, during which our primary concern was the care, training, and welfare — professionally, physically, and morally — of the men under our command. We had, on the average, between 15 and 20 years to learn those lessons. They became ingrained. We recognized a responsi-

bility 24 hours a day, seven days a week, for these men. We knew affection for them in our hearts, and we knew their unfailing response to real leadership. They were American soldiers, and there aren't any finer ones.

We must pass on to the younger officers the know-how of handling the American soldier. We have not taught the younger officers what to us became second nature — the responsibility of the officer for his men. We have that responsibility here in Washington equally with our brother officers in the field. . . .

I have a few other topics on which I wish to dwell, unrelated for the most part but deserving, I think, of being brought to your attention. If you find them, or anything else I have said this morning, of value to you in the exercise of leadership by your own chosen methods, then I shall hope you will make a note, and use them.

We face a situation unparalleled in the history of our or any other country. We are in the presence of evolving social and scientific forces, of which we can perceive only the general trends at this time.

The more confused we may tend to become, the more imperative is it, therefore, that in our thinking we keep simple, basic principles and objectives before our minds.

One of these basic principles was just recently stated by President Eisenhower in transmitting to the Congress Re-organization Plan No. 6, since become law. In it he stressed several points, one of which was the necessity for the maintenance of democratic institutions. This point is illustrated by the reiteration of a principle to which America has been unfailingly dedicated: The principle of civilian control of the military.

The command channels by which that control is to be exercised have been made unmistakably clear. The channel goes from the Constitutional Commander-in-Chief to the Secretary of Defense and through him to the Service Secretaries. In my own case, my commander is Secretary Stevens. I had not known him until last April, when he first visited my command in Europe. I want to say to you gentlemen — without reservation — that the Army has as its civilian commander as high-principled a man as the Nation can produce.

In a short talk he made at the Quantico Conference he said, "No one ever had more respect for the Army or more humility in approaching my task than I. I shall defend its prestige and rightful privileges to the utmost."

I am proud to serve under Secretary Stevens as Chief of Staff, and I feel sure you share that feeling with me.

Now I confide to you senior, responsible members of this staff the responsibility for proper indoctrination of all the personnel in your respective divisions, to the end that our teamwork and the mutual respect and understanding essential to teamwork be steadily strengthened and broadened.

Please remember, in this as in everything else I have presented today, there is a responsibility on each of us to educate others. Actually, everything in life can be translated into some form or other

of educative process, or, if you like, of training; and the requirements for training, and for leadership, are just as active and just as necessary in this great staff as they are in any field command anywhere in the Army. It plays just as vital a part right here as in the Seventh Army, the Eighth Army, or anywhere in the Continental United States.

Now a few points secondary in importance to what I have already said but still worthwhile, because they represent some of my idiosyncrasies as applied to the tasks we must work out together. . . .

LOYALTY. The necessity for this basic military essential is so clear that you scarcely ever hear it mentioned. Yet it is not automatic, and it is not always present — up, down, and laterally in equal degree — as it must be. This is not so much through design as through failure to cultivate it and to recognize its eternal importance. It either does or does not exist, and sometimes determination is difficult. It is particularly vital today in this period when we cannot see very far beyond the horizons, and when the utterances of senior officers, whether made publicly or in private groups, assume ever-increasing significance.

I shall expect the officers of this Staff to present their own honest views, fearlessly, forthrightly, but objectively in the light of their own conclusions as to what best serves the Army's over-all interests. The most dangerous adviser to have around is a "yes man," and the most useless is one who thinks of self instead of service. I shall also expect, at all levels, that having expressed his opinions and having heard the decisions, his entire support will then be put behind the execution of that decision, regardless of what his views had been.

CLIQUES. I have not the slightest knowledge of the existence of any cliques within this headquarters. I pray there are none, but I want to say in unequivocal terms that I will not tolerate such vicious elements if it is within my power to eliminate them.

CRITICISM. Indulgence in criticism is an ever-present temptation. If yielded to, it can quickly become a vice difficult to break. In the civilian field it is of lesser importance. In military organizations it is of vital importance. It tends to corrode, and corrosion produces friction; and friction generates heat and eventually spoils any machine if uncorrected. I am not talking of honest differences of opinion, least of all at those times when issues are being debated. I am talking of the practice of vicious "crabbing" about the official actions of proper authority.

BRIEFING. It is of the highest importance. It is impossible to read the masses of paper which your conscience might dictate that you should read, and the only alternative is oral presentation. I expect only matters of major importance — generally speaking, those requiring basic decisions or providing basic information which I should have — to reach me. When they do, I want in general an oral presentation by an officer thoroughly familiar with the major points on each side of every issue involved. These presentations will

In August 1953, General Ridgway assumed the duties of the Army Chief of Staff.

be arranged for by the Secretary of the General Staff.

I want no *ex parte* presentations at any time. If unresolved issues are presented to me, the views of the principal advocates of alternative courses of action must likewise be presented. Where the matter involves execution by a principal subordinate command, I want, in advance wherever practicable, the views of the commander who is to be charged with the responsibility for execution.

High-type briefing requires high-type thinking, a mastery of the facts, and the ability to summarize these facts with maximum effect in minimum words.

THE WORK LOAD. I think it is excessive. I think it must be and can be reduced. I shall seek the full cooperation of Secretary Stevens and the Under and Assistant Secretaries. But within our own resources, I think we can do much, by better organization — more of the spoken than the written word, less attention to the written record for alibi purposes, and more efficient and adequate delegation of authority to subordinates.

Now I have covered a good many things, all of them, in my opinion of substantial and some of essential importance. There are many others, I don't pretend to know the answers yet. I have a lot to learn from you before I can expect to know the answers; but with your

full help, on which I count, I am confident we shall find them. We shall meet together like this from time to time, but not so often as to trespass unduly upon your busy days. I shall visit each of you in your domains in the near future.

I have one note on which I want to close this first meeting. I am profoundly conscious of the privilege of sharing service with you and in seeking together to contribute our utmost in the discharge of the tremendous responsibilities with which the United States Army is charged. I have the deepest respect for what you have done, and what you are doing. I have no major changes to make at this time. I shall make none at any time without those most concerned having the fullest opportunity to discuss them with me and to participate in the process of reaching decisions. I shall have in these matters but one criterion: the over-all good of the United States Army in the light of the counsel which you and our field commanders give me and then of the best judgment I am capable of exercising.

I am convinced that whatever specters appear to some to lie ahead on close or distant horizons are the visionary imaginings of timid minds.

Decisions that will try the soul may well lie ahead. But the strength of a people is found in its energies, its capabilities, and above all in its character and moral principles. I think we have those in abundant measure.

I believe we were put on earth for a high purpose. I believe the American people have a reservoir of material and spiritual strength amply adequate to fulfill that purpose.

I am utterly confident in America's future, in the capacity of its leadership to meet the future, and in the ability of the Army to contribute to that leadership in fullest measure.

★ ★ ★ ★

Color Contour

M/Sgt Henry R. Sheridan

THE COLONEL figured there must be an easy way to color contour* maps. I agreed. He looked me in the eye and said:

"Sergeant! You know our students have to color their own maps. That's a pretty good system, but it takes too much time for what they get out of it. Now if we could color one master map and use it to duplicate the others in the same way, we'd have it. Printing's out; it's too expensive. We want something simple that can be done in the field."

"In other words, sir, something that could be used by an S2 or S3 in combat as well as in a school."

"Right! Why can't we try coloring a master map with some indelible, readily transferable material? Once this is done why couldn't we transfer it to a gelatin pad and run off copies."

"Want me to take a stab at it, Colonel?"

"Okay, sergeant, and let me know how you come out."

So I went to work. I struggled with the idea for some time, and after numerous false starts finally arrived at an acceptable method of mass producing low-cost color contoured maps. Because it has met with such approval, I'm passing it on.

The first thing you do is select the map you intend to use as your master color map. Then, using either hectograph ink or ditto pencil, color very carefully inside each designated contour. For example, all the terrain between 0 and 100 meters altitude will be one color; between the 100 and 200 meter contour lines another color, and so on, or for each desired interval. The best colors for low ground are light ones such as yellow or green. As the ground gets higher, use darker colors such as brown, red or purple, with the

* Color contour or layer tints — system of showing relief by use of a graduated series of color tints to indicate various levels of altitude.

darkest color, brown, for the hill tops. Of course, it's advisable to use blue for coloring the rivers, streams and lakes if they're not in color.

Let me caution you, however, that if you color your map with ink make sure that it is dry before you take the next step.

After coloring your map, put it aside for a moment and prepare your gelatin pad which is, of course, your duplicating surface. The gelatin pad, ditto pencils, and hectograph ink are items of issue and should be available in any battalion or regiment.

In preparing the gelatin pad, first lay it on a flat surface. Secure the pad in a stationary position with scotch tape, thumb tacks or any other fastener. Then with a damp cloth, NOT WET, go over the surface of the pad. Next wipe it with a dry cloth to assure there is no excess moisture. The pad must be damp to absorb the ink or pencil coloring from the master sheet. However, any excess moisture will cause the ink or pencil coloring to run and result in a blurred or smeary print.

Now the gelatin pad is READY. Pick up your master map, place it carefully on the pad, smooth it with your hand to remove all wrinkles and air pockets.

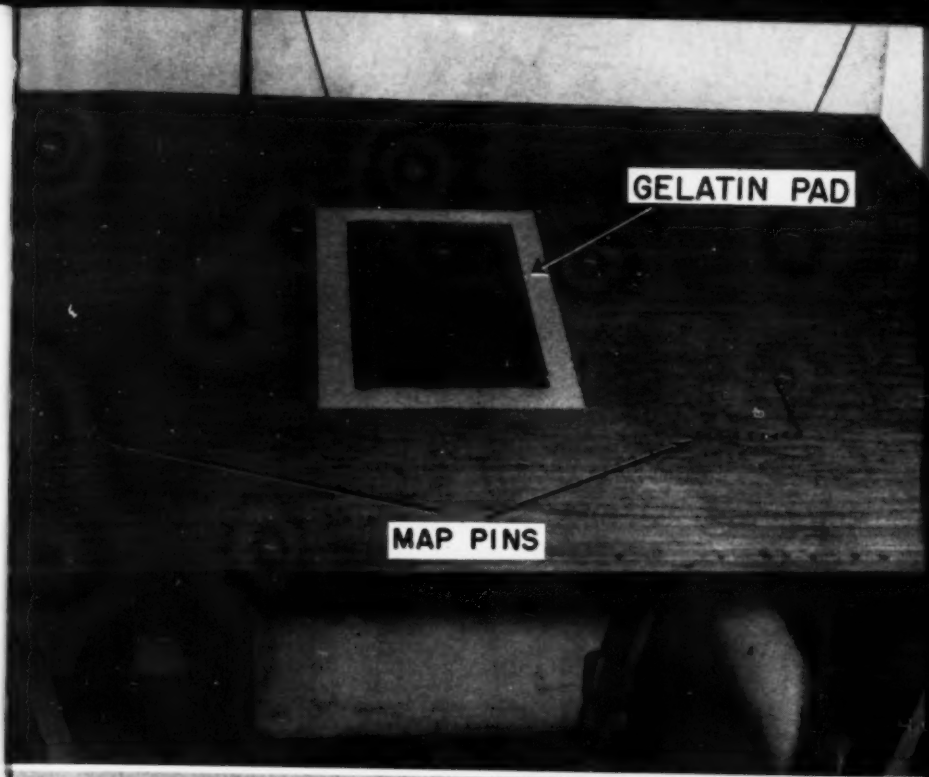
When you have the master sheet on the pad, place pins (round headed map pins, large thumb tacks or even small nails or straight pins) along two edges so that you will be able to put the subsequent copies in exactly the same position as the master copy (see photographs A and B).

Let the master map remain on the gelatin from three to five minutes. After this remove it. SAVE IT! It can be used again. (see photograph C).

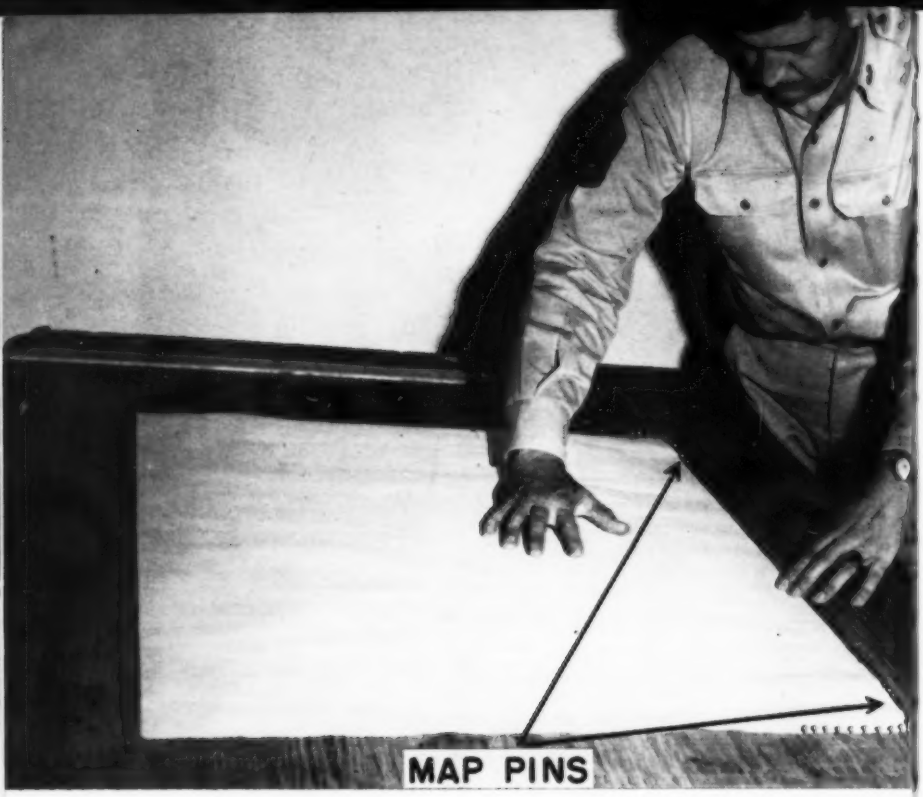
The ordinary uncolored maps are then placed on the pad in identically the same position and manner as the master map. This is done by fitting each copy against the guide-pins shown in photograph B. Run a soft clean cloth over the map exerting a slight pressure to make certain the color reproduces well. Let it remain for 10 to 60 seconds. You will discover that copies print bright and clear when the pad is fresh. The more the pad is used the longer the map must be left on the pad. You should get at least 25 bright, clear color contoured maps from this operation. If additional copies are desired merely place the master sheet on the gelatin pad again in exactly the same position and repeat the process. If the old pad is re-used in this manner, you should obtain at least 10 more satisfactory copies. A damp cloth or sponge rubbed lightly over the back of the master map will result in clearer reproductions the second time. Or, on the other hand, you can re-ink the

In photograph (A) at upper right the gelatin pad, laid on a flat surface, is secured with scotch tape or thumb tacks. The pad must be damp to absorb the ink or pencil coloring from the master sheet.

Below, in photograph B, the master map, colored with hectograph ink or ditto pencil, is placed on the pad and smoothed to remove all wrinkles. Pins are placed along the two edges so that subsequent copies will fall in the same position as the master sheet.


GELATIN PAD
MAP PINS

MAP PINS



Photograph C — After the master sheet has remained on the gelatin from three to five minutes it should be removed. The master can be used again, so save it. Now you're ready to start coloring your other maps, by placing them against the pins on the board in the same manner as the master map was placed.

master sheet and repeat the original process.

One word of caution. If pencil is used to color the master map fewer copies can be reproduced.

This process is effective for making overlays and reproducing orders. However, printed material reproduced by the gelatin pad process must be first typed with a special (ditto) typewriter ribbon.

After you have reproduced your maps, don't use the gelatin pad for approximately 24 hours. During this time the ink will be completely absorbed and the pad is again ready for use. Test it for cleanliness before using. Do this by pressing a clean sheet of paper over it. In this way you can tell whether or not all the ink has been absorbed.

The only thing startling about this method is its utter simplicity. All the materials used are inexpensive and easily obtainable. No longer is it necessary to go through

the tedious process of coloring each map individually. Time saved means manpower released for other important duties, whether in school or in combat. Make the most of this color-contour technique.

Here is a list of the material you will need to reproduce color contour maps:

1. Film, duplicator, gelatin process, fiber or cloth back, 9" x 14" (item of issue). Cost is 28¢.
2. Map pins, thumbtacks, straight pins, small nails. Items of issue.
3. Ditto pencils. Engineer item of issue.
4. Hectograph ink. Engineer item of issue.
5. Pen, speed ball. Nos. 0-6.
6. Brush. ¼" and ⅛" artist's brush (camel hair).

Star Unit . . . the 120th Infantry

We salute the 120th Infantry Regiment of the North Carolina National Guard for being a 100 per cent subscriber to THE INFANTRY SCHOOL QUARTERLY.

Col Maston S. Parham, the Regimental Commander writes us: "I am a reader of THE INFANTRY SCHOOL QUARTERLY. Each of the units under my command has been encouraged to subscribe to the *Infantryman's Magazine* and use pertinent articles in the training of their respective units. I believe THE INFANTRY SCHOOL QUARTERLY is the best means available for keeping abreast of the trends in the development of the Infantry."

Many thanks to you, Colonel Parham, and to the company commanders of the 120th Infantry Regiment.

Each quarter this magazine will salute those regiments which are 100 per cent subscribers to the *Infantryman's Magazine*. Look for other star units in the near future.

Again, our thanks to the 120th Infantry Regiment.

WHAT'S *New!*

The following information provides a means of keeping up-to-date on matters of professional interest.

Currently Under Study

Elimination of Cross Level Mechanism on Infantry Mortars. If tests determine it feasible to eliminate the cross level mechanism it will simplify production, reduce weight and decrease complexity in sighting the weapon.

•

Contact-Impact Visual Marker. A study is being made to determine the suitability of spherical markers for use by armored units. The markers would be used to mark routes during tactical operations. They would be approximately four inches in diameter and weigh one-half pound each. They would consist of an eighth-of-an-inch ceramic shell intended to shatter upon light impact, but still sufficiently durable to withstand the normal military shipping and handling. The pigmented filler would be either red, yellow, green or gray. The marker would be broken at critical road junctions or cross roads to mark the route to be followed. The powdered gray color would be used as an eraser.

•

AR Transition Firing. A new transition firing course for the Automatic Rifle has been recommended for study and possible adoption. The proposed course is set up in line with recent changes in the standard rifle marksmanship courses revised for the M1, automatic rifle and carbine.

The proposed automatic rifle course would eliminate a number of double and triple targets that exist in the present course and would replace them with "E" and "F" type silhouette targets thereby placing greater stress on sight alignment and trigger manipulation.

•

Unabridged Firing Tables for the 4.2-inch Mortar M30. An unabridged firing table for 4.2-inch mortar ammunition is under study. This table would include data for all ranges at which the mortar is considered safe to fire in emergency combat situations. It is believed that data for use at other than normal conditions, such as extreme minimum and maximum ranges, should include explicit instructions as to restrictions and limitations on conditions of use. This will enable the 4.2-inch mortar to fire at closer as well as greater ranges by changing the charge increments for the desired range.

Under Test

Mobile Field Laboratory Vans developed by the Engineers include a materials lab, a cleaning and preservation unit, a photomapping train for topographic organizations and five maintenance shops. All mounted on trucks or semi-trailers, the mobile materials lab is designed to support the construction of airfields. It will be used to determine the capabilities of existing airfields and roads as well as those under construction.

Heavy engineering equipment can be cleaned and preserved at forward stations by the cleaning and preservation unit. The vans carrying the photomapping equipment can be expanded in five minutes by two men. They contain all the necessary equipment for computing, plotting and editing, and can be air conditioned if necessary.

•

Tips

Rusting of Iron Screws used in the case of the "handy-talkie" radio set, AN/PRC-6, can be minimized by clearing and touching-up screw heads with paint each time these screws are removed and replaced.

•

Radio Mechanics Making Adjustments (alignment changing frequency, etc.) to the AN/PRC-6 should be cautioned against permitting the selector switch to remain in the "calibrate" position. The battery BA-270/U becomes unserviceable due to rapid discharge of the filament section when the switch is left in this position.

•

Vehicular Batteries supply power for the radio sets AN/GRC-7 and -8 series must be maintained at close to full charge. Certain components of this equipment require full rated voltage for proper functioning, and will fail to operate if batteries are even slightly under-charged.

•

Radio Operators should be cautioned that the tuning controls of the receiver-transmitter RT-68/GRC ("A Set"), used with the radio sets AN/GRC-7 and -8 series, are subject to mechanical jamming. These controls are mechanically synchronized, and forced turning of one when the other is jammed results in slippage and desynchronization.

•

New

Contactor Latch on 3.5-inch Rocket Launcher. This new latch completes the electrical firing circuit without the usual delay of adjusting the squib wires. By flipping the latch the weapon is ready to fire thereby allowing the gunner to fire at a much more rapid rate.

Developed

Parachute Collapsing Trainer for use in Airborne Training. Using suspension lines attached to a block and tackle with weights suspended on the running end of the lines, the student practices pulling in suspension lines while in the prone position. The weights approximate the power exerted by the T-7 parachute against which the student must pull in order to collapse the parachute. Both single riser and bottom riser methods can be taught on this device.

•

Wrist Radio that can receive, but not send, broadcasts within a range of 40 miles. Developed by the Signal Corps, the radio is worn much in the manner of a watch. It contains a plexiglass case 2 inches long, $1\frac{1}{8}$ inches wide and is $\frac{3}{4}$ of an inch thick. Power is furnished by a mercury battery that is just a little larger than the top of a pencil. The radio is equipped with a knob for selecting stations and frequencies.

•

A Tugboat that Will Travel Sideways has been developed by the Army Transportation Corps. The vessel is 120 feet long and is powered by two 1000 hp engines. Intended primarily for use in moving barges carrying military cargo on overseas inland waterways, the craft has two rotating discs built into the bottom of the stern. Vertical blades projecting from the discs also can be rotated to control movement of the tug in any direction.

•

Faster Method to Produce Maps developed by the Engineers involves an ammonia process which makes prints from a positive film and in effect reduces the material and time needed in making maps from negative prints. The ammonia process, often called the diazotype method, uses a paper coated with a light-sensitive dye which can either be selectively decomposed or bleached by light. This paper is exposed to light in contact with a transparent positive original, and the exposure is subjected to ammonia fumes. A direct positive photographic print of the original is produced. Once the film positive is made, there remains only two steps left; the printing and dry development. This eliminates five processing steps in making new maps.

•

An Electric Power Cable that will unroll freely at temperatures as low as 65 degrees below zero. Standard commercial cable tends to break and snap in extreme cold. This new military cable, developed by the Engineers, operates successfully under both tropic and temperate conditions.

Manuals

Revised. FM 7-30, **"Service and Medical Companies, Infantry Regiment,"** has been forwarded for approval and publication. It contains new supply and medical doctrine adopted by the Army as a result of lessons learned in World War II and Korea.

•

Revised. FM 72-20, **"Jungle Warfare,"** has been forwarded for approval and publication. This manual is a complete revision of the old 1944 manual. Much of the new information comes from our experiences in World War II and from tests made at the Carribean Jungle Center.

•

Change 2 to FM 7-35, **"Tank Company, Infantry Regiment,"** was printed and distributed on 14 September 1953. It contains current information on the new communication equipment in the company, new logistical doctrine and the **new** doctrine for the Infantry-tank team in the attack (see Oct 53 QUARTERLY).

•

Change 2 to FM 7-37, **"Heavy Mortar Company, Infantry Regiment,"** was published and distributed on 11 August 1953. It is devoted entirely to current heavy mortar logistical and communication doctrine.

•

Revised. DA Pamphlet 20-112, **"Individual Training in Atomic Warfare,"** was printed and distributed on 22 June 1953. The revised pamphlet incorporates the latest information on individual protection obtained from recent atomic tests. New radiation detection equipment is shown in illustrations and a new appendix on the armored unit soldier has been added.

•

Training Circulars

Training Circular 15, **"Aerial Delivery of the Parachutist's Combat Load,"** was printed and distributed on 20 July 1953. It explains the preparing, packaging, attaching and wearing of the parachutist's combat load. Well-illustrated, it shows the exact location on the parachutist of each piece of equipment.

•

Training Circular 17, **"Battle Indoctrination,"** was printed and distributed on 29 July 1953. It covers such courses as close combat, infiltration, small arms fire, attack and combat in cities. It has four appendixes — the first three give suggested situations and methods of running the close combat course and the small arms fire course. The fourth appendix is a recommended training schedule for all of the courses.

FIRE SUPPORT

FOR THE

combat patrol

Planned fire support may mean success for your combat patrol. Here's a true story.

Maj James Chrietzberg, Jr.

THE CO TELLS YOU, "Lieutenant, tomorrow you will take a combat patrol to this village and destroy the enemy outpost there. The S2 will give you the enemy situation, your route of movement, and any other information you need. An artillery forward observer will accompany you. Any questions?"

Sure you have questions. The first one might well be: "What if I run into more than my platoon can handle? Will anybody help me?"

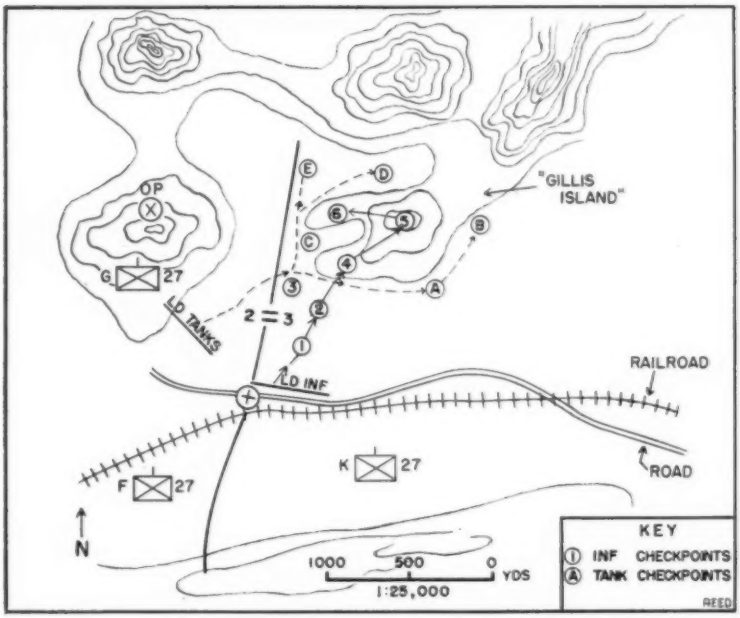
It is a good question. A great deal has been written and taught about patrolling, but most of this is aimed directly at the patrol leader and the individual members of the patrol. Little, however, has been written about the part that higher headquarters can play in making the job of combat patrol easier.

Our best teacher here is Korea. Inexperienced units have sent out many patrols that failed to accomplish their missions and suffered unnecessary casualties. Other units carefully planned and coordinated all available fire support to help their patrols. The result was missions accomplished economically and efficiently.

You can't feed your men merely by telling them to eat, and you won't get good fire support just by telling a patrol leader that it's available. Planning is the key, and for most patrols this can best be done by the battalion staff. Let's take a concrete example and see exactly what methods and "tricks of the trade" one battalion in Korea used.

This unit was in a semi-static defense position, and plenty of time was available for detailed planning of fire support for patrols. In a more mobile situation there will be less time for planning, but the same principles apply.

In the fall of 1951, the 27th Infantry Regiment occupied defense positions northwest of Kumwha, Korea. For three months there had been no major changes of our positions or those of the enemy. Activity was limited to exchanges of



Defense position of the 27th Infantry Regiment.

artillery fire and patrolling. We sent out patrols day and night, while the enemy did almost all his patrolling at night.

The defense position of the 27th ran along a railroad track, with the front lines on low ground facing north (see map). Behind the main line of resistance there was higher ground from which we could observe the valley to the front.

Company G manned an outpost on the high ground about 1,500 yards north of the main line of resistance. From here there was excellent observation of the valley and of the Chinese positions to the north and east. On the hills in front of their main defense positions, the Chinese had a number of outposts. All the Chinese foxholes were well dug in with overhead cover.

One of these outposts was located on a small hill east of G Company's position. Our men had nicknamed the hill "Gillis Island." It was shaped like a horseshoe with its prongs pointing to the west. The north prong was slightly higher than the south prong. Along this north prong the enemy had constructed several bunkers.

On 3 November 1951, the 2d Battalion of the 27th Infantry was di-

rected to send a combat patrol to Gillis Island. Its mission: To destroy the enemy personnel and bunkers and to capture prisoners. The patrol was to go out on 11 November. Twelve medium tanks of Company C, 89th Tank Battalion, were available for support.

Company F was directed to provide a rifle platoon for the patrol. The company commander in turn designated his second platoon for the mission. The battalion commander said that he would control the patrol and that his staff would take care of the planning and coordination.

A good patrol is like an iceberg. Seven-eights of it lies beneath the surface. That seven-eighths is detailed planning. By the time H-hour approaches, the patrol's chances of success have already been largely determined by the thoroughness of the preparations that have been made. Let's take a look at the planning for this patrol.

* * *

On 8 November the colonel* held a meeting at Observation Post X, on the high ground held by G Company. From here the group could see the terrain over which the patrol was to run and all of the area surrounding it. The group consisted of the 2d platoon leader of Company F; the C Company commander, 89th Tank Battalion; the liaison officer, Heavy Mortar Company of the 27th Infantry; the H Company commander; and a lieutenant from the 2d Battalion who was to observe from an artillery observation plane during the patrol. During this orientation the following was accomplished:

1. The lines of departure and routes of movement both for the tanks and the Infantry were pointed out and discussed in detail. Check points were designated along the Infantry's route.

2. The tanks' plan of maneuver was discussed. Their firing positions were selected.

3. All known or suspected enemy positions that could bring fire on the patrol were pointed out to the personnel from the artillery, heavy mortars, and the heavy weapons company. Targets were designated on which these weapons were to place prearranged and preparatory fires.

4. The communications system to be used for controlling the patrol was planned in detail.

The next day the patrol leader took his non-commissioned officers up to Observation Post X, where he oriented them on the terrain and explained the part supporting elements would play in the patrol. He also went over the Infantry's plan of action with them. In the platoon area the lieutenant constructed a terrain model of the objective area which he used to brief the entire platoon.

On the same day the artillery and mortars registered on enough points to insure quick adjustment on any enemy positions that might cause trouble. But they kept this registration to a minimum to avoid giving away the plan of action and objective of the patrol. It did not add

* Lt Col Vern M. Reaugh.

greatly to the normal amount of fires delivered during the day.

The afternoon before the patrol went out, the battalion CO assembled the key personnel again, this time at the battalion command post. Using a terrain model, the tank and Infantry leaders talked through their parts in the patrol. The minor details of coordination were gone over and ironed out.

* * *

Now let us take a look at the way the fire support tied in with the Infantry's plan of action. The platoon's line of departure was a road just forward of our main line of resistance. The platoon was to cross the LD at 0830 and move to Check Points 1 and 2. One rifle squad would screen Check Point 3 and leave the two light machine guns there to support the platoon's movement along a dry stream bed and up to the south prong of Gillis Island, which was designated as Check Point 4. One squad would remain here and support the other two squads as they moved northeast to Check Point 5 and then west to Check Point 6.

Before daylight, the tanks were to move to an assembly area behind the combat outpost. Their line of departure and route of movement would not be the same as that of the Infantry, so that fire directed at the tanks would not cause casualties among the Infantry. Since they would cross the line of departure 10 minutes after the Infantry, both elements would reach the objective area at about the same time.

Before reaching the objective the tank company would split. One platoon would go south of Gillis Island to positions A and B, while the other two platoons would move north of the objective to positions C, D and E. Two tanks would climb the south prong of the objective and move up to Check Point 5.

The job of the tanks was to support the Infantry by fire and to neutralize any small arms and automatic weapons fire the enemy might place on the patrol from positions north of the objective. The tanks also were to prevent the enemy in the vicinity of Gillis Island from withdrawing to their main lines to the north. A tank liaison officer at the Observation Post would direct the tanks' fire on targets that could not easily be picked up. He also would help the battalion commander in controlling the tanks' actions.

The fires of the artillery and mortars were completely coordinated with the patrol's plan of action. From 0830 until 0840 they were to place high explosive fires on the objective, and smoke and high explosives on known enemy positions northeast, north and northwest of the objective. All of these fires would be available on call throughout the operation.

The 81mm Mortar Platoon, Company H, and the 2d Platoon, Heavy Mortar Company, would displace to positions south of the combat outpost to support the patrol more effectively. An 81mm mortar observer would accompany the Infantry platoon.

The artillery liaison officer, the heavy weapons company commander, and the heavy mortar liaison sergeant would be at Observa-

tion Post X. In addition, an Infantry officer in an artillery observation plane would be overhead throughout the patrol, paying particular attention to locations at which the enemy might have high angle fire weapons in position.

Communications also were planned in great detail (see diagram of radio net). The rifle platoon would have an SCR 300 radio to keep in touch with the tanks and with Observation Post X. The tank liaison officer would have radio communication with the tanks. The 81mm mortar observer would have an SCR 300 to communicate with the mortar positions and with Observation Post X. The mortar and artillery observers at the observation post would have both wire and radio communication with the gun positions. The battalion commander, controlling the patrol from Observation Post X, would be in contact with all elements of the patrol. In addition, two direct wire lines were laid from Observation Post X to the battalion switchboard.

* * *

By the evening of 10 November all these plans had been completed. Everyone knew his job and was ready and anxious to go. Let's see now how these plans actually worked out.

The tanks and Infantry moved out as scheduled. The platoon moved through Check Points 1 and 2 without meeting resistance and reached Check Point 4 by 0953. A few minutes later they reported receiving long range small arms fire from the north. Observers at Observation Post X located the enemy positions which were immediately silenced by mortar fire.

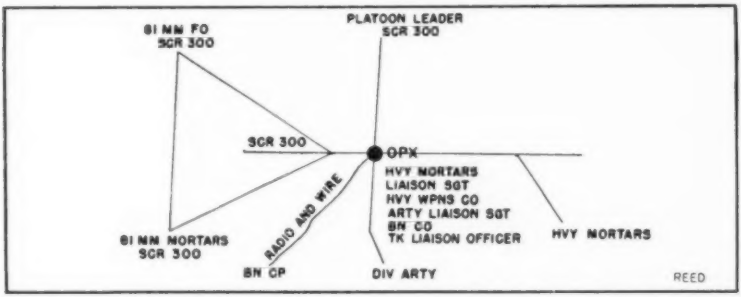


Diagram of radio communication set-up.

By 1010 two tanks had reached the base of the southern prong of Gillis Island and were reconnoitering to find a route up to Check Point 5. This ground was steeper than they had anticipated, and the tanks had some difficulty climbing the slope. Meanwhile one platoon of tanks had started around the south side of the objective toward

positions A and B. The rest of the tanks were still moving up on the west side of the objective.

At just about the same time an observer at Observation Post X saw five enemy soldiers moving around on the hill to the northwest of the objective. Artillery fire was immediately placed on them. The rifle platoon found some enemy bunkers between Check Points 4 and 5, which they destroyed with demolitions. Meanwhile the squad at Check Point 4 became involved in a fire fight with an estimated two squads of enemy in bunkers near Check Point 6.

Whenever an observer at the observation post noticed any enemy movement, mortar or artillery fire was placed on it. By 1045 all the tanks had reached their positions A, B, C, D and E, and were firing on enemy positions to the north and west of the objective.

About 1100, one tank joined the two rifle squads that were moving on Check Point 5. Firing on the enemy positions, this tank moved in with the Infantry as they overran them. Then the rifle squads moved on to Check Point 6, while the tank had to stop and return to Check Point 4 because of rough terrain. The Infantry moved in and destroyed all the enemy bunkers with grenades and demolitions.

Now the entire area was screened by the Infantry for other enemy positions. During all of this action the tanks, artillery and mortars delivered intermittent fires on enemy positions north and northwest of the objective.

At 1247 the battalion commander ordered the patrol to withdraw. The two rifle squads at Check Point 6 moved out first. As they came off the objective, the platoon sergeant saw a Red soldier crawling out of the ruins of one of the bunkers. The sergeant and two men ran back, grabbed the enemy and dragged him along with them.

The other rifle squad and the tank at Check Point 4 began its withdrawal next. As soon as they were clear of Gillis Island, the other tanks began to pull back. By 1344 all elements of the patrol had reached the main line of resistance or the combat outpost.

The final results of the patrol were nine enemy counted dead and six more estimated killed, one prisoner of war taken, and six enemy bunkers destroyed. We suffered one tank damaged by a mine (it was towed back safely by another tank), and two men slightly wounded by enemy mortar fire.

The patrol had other good results. For one thing, the replacement members of the platoon gained experience in offensive action and tank-Infantry teamwork. The patrol helped the morale of men who had been forced to sit in a defensive position day after day. The patrol's effect on enemy morale was shown about a month later when another combat patrol went out. As soon as this patrol crossed the line of departure the personnel on Observation Post X saw about 30 enemy troops abandon Gillis Island in obvious haste and confusion and take refuge in the hills to the north. The patrol met no opposition.

* * *

The combat patrol of 11 November 1951 completed its mission suc-

cessfully, suffering very light casualties. Let's see now what factors contributed to its success.

First, there was detailed planning and coordination. All personnel involved were thoroughly oriented, not only in their own jobs, but on the plans of action of all other elements of the patrol. Another factor was the designation of easily identifiable check points so that units could report locations quickly and correctly. Fire support in the form of mortars, artillery and tanks was made available to the patrol. It was set up so that it could be controlled, and could be called for and obtained quickly.

Speedy delivery of fires when they were needed was insured by having preregistration of the mortars and artillery. This preregistration was done in a manner that did not give away the plan of the patrol. The tanks played a large part in the success of the patrol. They isolated the objective area so that the Infantry could clean it out without interference.

Planning, coordination and control can best be accomplished by the battalion staff, as they were in this patrol. The battalion commander helped the patrol greatly by establishing and operating a central control point at Observation Point X, through which all elements of the patrol were controlled. This not only left the Infantry and tank leaders free to control their own units, but made it possible to bring fires on areas that could not have been observed by the men actually involved in the fight.

The establishment of a central point operated by the battalion staff does not mean that the battalion commander controls all combat patrols he sends out. He may desire to do so for some of them, or he may designate a member of his staff to operate the central control point.

Another reason for the success of the patrol was the presence of a communication system that provided contact among all elements of the patrol and an alternate means of communication in case one means failed. At no time during the action was any element out of communication with another element.

Time is needed to plan a combat patrol thoroughly. The men must be oriented and the different elements properly coordinated. Commanders and staff officers assigning patrol missions should take the time factor into account. Units that allow enough time for preparations, even though it means sending out fewer patrols, will be paid in patrol missions accomplished with minimum casualties.

Coordinated fire support can be invaluable to the combat patrol. The patrol mentioned here is only one case where planned support paid off. Perhaps this example will be of practical help to other units both in training and combat.

My right has been rolled up. My left has been driven back. My center has been smashed. I have ordered an advance.

— Gen Foch

re MOS's awarded as
of duty performance?
oes the journal consist of
sheet and journal file?
trials by Courts Martial held
HELP
e files properly maintained?
FOR THE SI
re Qualification Records (DA AGO for
kept up to date?
Is sufficient athletic equipment
o all subordinate units?
Are lateral transfer restrictions ob
CAPT DELMAR A. PUGH

Here's something every S1 should have . . .

HOW MANY TIMES have you felt the need for a job checklist? You know — something you can use periodically to see if you're doing ALL your job?

Chances are that if you are one of the "S's" at regimental or battalion level you have often thought about the matter — but because you're swamped with work have never gotten around to preparing a job checklist.

Checklists, and I'm certain you agree, provide an excellent means of control, especially for the many administrative duties of a staff section in a busy headquarters. Checklists provide a means of enabling you to gauge, almost at a glance, the progress your section is making and whether it is performing its specified duties. In short, they give you a yardstick that can be used as a means of comparing actual performance with desired performance.

Not long ago a group of us got together and decided to do something, if not for all the S's, certainly for the S1. The end product of our efforts is the checklist which follows. You will note that all of the items to be checked are listed under one of the 11 S1 personnel functions. If all the questions are answered YES (and they should be if an S1 section is performing all its duties), you can be certain a good job is being done. In any case, I suggest that every S1 keep this checklist handy for ready reference.

STRENGTH, RECORDS AND REPORTS

a. Is one unit journal maintained for the entire headquarters? _____

b. Is there a prescribed method of gathering journal information from all sections of the command post? _____

c. Does the journal consist of a journal sheet and a journal file? _____

d. Does the journal sheet contain a summary of important information? _____

e. Does the journal file contain the pertinent messages, orders, notes or other source of information? _____

f. Are incidents such as visits and departures of higher unit staff officers and commanders noted in the journal? _____

g. Is the last entry for the day followed by a summary of the day's action and a paragraph concerning plans for the following day? _____

h. Is a work sheet maintained? _____

i. Is the work sheet paragraphed according to paragraphs of the unit report or eleven personnel functions? _____

j. In combat situations, is a daily record maintained denoting "on line" strength? _____

k. Is an assigned strength report maintained denoting the difference between assigned and authorized strength by grade and unit? _____

l. Does the regimental standing operating procedures state the methods and time daily strength messages are submitted? _____

m. Are master casualty files maintained at the regimental personnel section? _____

n. Is an officer designated to write sympathy letters to next-of-kin in case of death? _____

o. Are regular checks made with grave registration units, clearing stations, aid stations, evacuation hospitals, and adjacent units in an effort to locate men reported as "missing in action"? _____

p. Are periodic checks performed on the individual personnel records by the S1 or Military Personnel Officer to ensure they are accurate and up-to-date? _____

q. Does the S1 arrange for timely audit of Unit Funds by designated officers? _____

r. Has the Military Personnel Officer completed the basic information accurately on officer efficiency reports? _____

s. Has the next superior officer of the rated officer completed the efficiency report as the rating officer? _____

t. Is the efficiency report the proper type for the rating period covered? _____

u. Has a time been established when each staff section will submit its portion of the unit report to the officer responsible for its final preparation? _____

v. Is proper distribution being made of the unit report? _____

w. Is the correct classification being placed on the unit report? _____

x. Is the unit report filed and safeguarded properly? _____

REPLACEMENTS

a. Are replacements welcomed by the commanding officer or the executive officer on arrival at regiment? battalion? company? _____

b. Does the S1 coordinate with the S4 to ensure that nonessential baggage of each replacement is properly tagged and stored? _____

c. Does the S1 coordinate with the S4 for necessary feeding and housing if the situation requires? _____

d. Are subordinate units notified of the anticipated arrival of replacements? _____

e. Are replacements released to forward units when they are in reserve, if possible? _____

f. Are guides furnished by subordinate units to guide replacements to the appropriate headquarters? _____

g. Are postal locator records completed for all replacements? _____

h. Has necessary transportation been arranged to transport replacements from the Division Replacement Company to subordinate units? _____

i. Have all interested staff officers been notified of the assignment and arrival of replacements? _____

DISCIPLINE, LAW AND ORDER

a. Is the S1 aware that supervision of discipline, law and order is his responsibility? _____

b. Are statistical records being maintained on indicators of low morale and discipline? _____

c. Are preventive measures being used to encourage respect for authority? _____

d. Are effective corrective measures taken when necessary? _____

e. Are special staff officers used to assist? _____

f. Does the regimental security platoon perform military police duties when required? _____

g. Does the regiment have an effective plan to control straggling? _____

h. Does the regiment have an effective plan to control absence without leave? _____

i. Is Article 15 used in accordance with the Uniform Code of Military Justice? _____

j. Are uniform punishments adjudged for like offenses? _____

k. Has Article 137 of the Uniform Code of Military Justice been complied with? _____

l. Are charge sheets prepared and processed with existing regulations? _____

m. Are statistics being maintained on number and type of courts-martial cases? _____

n. Are trials by courts-martial held promptly? _____

o. Are confinement facilities inspected regularly? _____

p. Are orders published correctly pertaining to courts-martial? _____

q. Are boards of officers appointed under proper and competent authority? _____

r. Are boards composed of a sufficient number of officers to accomplish their mission? _____

s. Are board members familiar with current regulations pertaining to the particular type of board on which they are serving? _____

t. Are investigating officers familiar with their duties? _____

u. Are blank forms maintained in ample supply for various types of investigations? _____

PRISONERS OF WAR

a. Is a record maintained of the number of prisoners of war captured and evacuated? _____

b. Does the Regimental Headquarters Commandant utilize the security platoon to establish and operate the prisoner of war collecting point? _____

c. Is the responsibility for evacuation of prisoners of war within the regiment from lower unit to higher unit? _____

d. Has a standing operating procedure been prepared and distributed for the regiment pertaining to prisoners of war? _____

e. Is sufficient time allowed for interrogation of prisoners of war at the regimental collecting point by the S2 or attached Interrogation of Prisoners of War Teams? _____

f. Is the prisoner of war collecting point established near, but not within the command post? _____

g. Does the S1 coordinate with the S4 to provide for transportation for evacuation of prisoners of war? _____

h. Are prisoners of war disarmed, segregated and searched immediately upon capture? _____

i. Are military documents removed from prisoners of war, identified with the prisoner, and returned with the guard at the time of evacuation? _____

j. Are prisoners of war evacuated as rapidly as possible from the danger zone? _____

k. Are prisoners of war provided medical attention when required? _____

l. Are all rules of the Geneva Convention of 1949 as pertains to prisoners of war complied with? _____

m. In the combat zone, have all personnel been provided with the Geneva Convention Card, DA Form 528? _____

n. Are sufficient guards provided in the evacuation of prisoners of war? _____

BURIALS AND GRAVES REGISTRATION

a. Does the Graves Registration Officer maintain records of all Allied and enemy dead evacuated through the regimental graves collecting point? _____

b. Are all means used to identify unknown deceased personnel prior to evacuation from the graves registration collecting point? _____

c. Is the graves registration section utilized to supervise the collection of dead when necessary? _____

d. Are personal effects removed, inventoried, censored and safeguarded at the graves registration collecting point? _____

e. Do the S1 and S4 coordinate the use of transportation for the evacuation of the dead? _____

f. Do rifle companies conduct battlefield search for the dead and evacuate to a battalion collecting point? _____

g. Do battalions assist when companies are unable to evacuate the dead from the company area of responsibility? _____

h. When the situation requires isolated burials, are graves properly marked and reported to higher headquarters? _____

i. Are personal effects removed from deceased personnel only by graves registration personnel or authorized representatives? _____

j. Are all commanders aware of their responsibilities for collection, identification, and evacuation of deceased personnel? _____

k. Are remains of Allied dead processed in the same manner as our own deceased personnel? _____

MORALE AND PERSONNEL SERVICES

a. Are DA Forms 638 and 639 (Recommendation for Award) available in ample supply for distribution to subordinate units? _____

b. Have the decorations principles and the part each individual plays in the recommendation for awards been incorporated into the Regimental Standing Operating Procedure? _____

c. Are all members of the command aware of the fact that any individual may submit a recommendation for an award? _____

d. Are all personnel familiar with the preparation of DA Forms 638 and 639 (Recommendation for Award)? _____

e. Is there a "Unit Writer Team" organized in regimental headquarters? _____

f. Has a decorations board been appointed? _____

g. Are recommendations for awards processed as rapidly as possible to expedite the awarding of the decoration to the individual? _____

h. Do units utilize formations for the presentation of decorations to individuals whenever possible? _____

i. Does the highest ranking officer available make the presentation? _____

j. Is there equality between the battalions of the regiment with regard to number and type of decorations based on combat? _____

k. Are copies of the official order awarding the decoration given the individual and also placed in his field 201 file? _____

l. Is proper publicity given to the decoration ceremony and/or presentation? _____

m. Is sufficient athletic equipment available to all subordinate units? _____

n. Does the S1 coordinate all matters affecting the morale of the command? _____

o. Does the S1 supervise the following morale supporting activities? (1) Welfare work, (2) Pay, (3) Leave policies, (4) Rest center quotas, (5) Promotion policies, (6) Postal service, (7) Red Cross Service, (8) Safety program, (9) PX facilities, (10) Public Information, and (11) Special Services. _____

p. Are periodic visits made to subordinate units to determine their needs and measure and evaluate the morale of the unit? _____

q. Is a leave roster maintained for all officers in the regiment? _____

r. Is a roster maintained for personnel departing on rest and recuperation quotas? _____

s. Are rest and recuperation quotas distributed to those subordinate units with the greatest need? _____

CIVIL AFFAIRS/MILITARY GOVERNMENT

a. Is close coordination maintained with the division military government staff section? _____

b. Does the S1 anticipate in advance when practicable, what number and types of military government teams will be needed by the regiment? _____

c. When military government teams are attached to regiment, are they oriented, assigned specific tasks and required to submit appropriate reports? _____

d. Is proper supervision maintained of attached military government teams? _____

e. Is the commander or executive officer informed of the military government situation at all times? _____

f. Is division notified when civilian refugees are to be evacuated to the Division Civilian Collecting Point as to approximate number and expected time of arrival? _____

g. Are necessary precautions taken to guard against saboteurs, enemy sympathizers, and enemy soldiers among civilians? _____

h. Are a minimum number of combat troops utilized to guard civilians when necessity demands they be guarded? _____

i. Is a portion of the regimental standing operating procedure devoted to military government activities? _____

j. In preparing emergency plans for controlling or aiding civilians in the combat zones, is coordination affected with all necessary staff officers at battalion, regiment and division? _____

k. Are arrangements made for thorough screening of alleged political prisoners by proper authority prior to their release? _____

l. Have directives been issued to subordinate units outlining the relationship of troops to civilians — friendly, enemy or neutral as set forth in the rules of the Geneva Convention of 1949? _____

m. Do subordinate unit military government plans conform to the regimentals plans? _____

PERSONNEL PROCEDURES

a. Are Qualification Records (DA AGO Form 20) kept up-to-date and made available to subordinate unit commanders? _____

b. Are all commanders familiar with current classification procedures? _____

c. Are individuals assigned to units on the basis of Military Occupational Specialties and physical profile? _____

d. Are Military Occupational Specialties awarded as a result of duty performance? _____

e. Are assignment adjustments made on the basis of prescribed priorities? _____

f. Are lateral transfer restrictions observed? _____

g. Do commanders distinguish reductions for inefficiency from reductions as punishment for breaches of discipline? _____

h. Does the Regimental Military Personnel Officer maintain an up-to-date roster of existing Table of Organization vacancies in the regiment by Military Occupational Specialty, grade and unit? _____

i. Are replacements interviewed while at the Division Replacement Company for possible assignment to key personnel vacancies? _____

j. Is information obtained from the Qualification Record (DA AGO Form 20) used in the assignment of enlisted men? _____

k. Is there coordination between the S1, S3 and the Commanding Officer of the Regiment prior to assignment of replacements? _____

l. Is there coordination between the Regimental Personnel Officer and the S1 prior to assignment of replacements? _____

INTERIOR MANAGEMENT

a. Is the headquarters divided into echelons to facilitate control? _____

b. Upon receipt of an order to displace the command post, does the S1 coordinate with the S3 and Communication Officer on the flag location of the new command post? _____

c. Do the S1 and the Communications Officer plan a ground reconnaissance for the selection of the actual command post site? _____

d. Is coordination effected with the Headquarters Commandant and tentative plans made for the displacement of the command post? _____

e. Does the quartering party include the S1 and/or Headquarters Commandant, Communication Officer, and members of the communication and security platoons? _____

f. Is space designated to be occupied by the commander and each staff section, and are such locations coordinated with respect to efficient operation, security and defense? _____

g. Is sufficient dispersion provided for all installations within the command post? _____

h. Are provisions made for rest periods for command post personnel? _____

i. Does the security platoon prepare positions from which the command post can be defended? _____

j. Is an efficient warning system established against air, airborne, tank or chemical attack? _____

k. Are details for movement and subdivision of the command post staff sections into echelons included in the headquarters standing operating procedure? _____

l. Does the command post close and the new command post open simultaneously? _____

CIVILIAN EMPLOYEES

a. If civilian labor is utilized, has a civilian personnel officer been appointed? _____

b. Are Allied and/or neutral civilians employed as paid, volunteer labor? _____

c. Does the unit policy pertaining to civilian employees conform to local labor laws and practices? _____

d. Are higher headquarters civilian employment policies complied with? _____

e. Does the unit policy contain the organization, responsibilities, and conditions of employment of civilian employees? _____

f. Are labor supervisory personnel included in troop lists? _____

g. Does the unit policy foster an attitude of teamwork between military and civilian personnel? _____

MISCELLANEOUS

a. Are miscellaneous staff functions usually assigned to S1? _____

b. Is military correspondence prepared properly? _____
c. Are files properly maintained? _____
d. Are orders published in accordance with current regulations? _____
e. Is a regimental policy file maintained? _____
f. Is the regimental standing operating procedure current? _____
g. Is proper dissemination given of approved policies of the commander? _____
h. Is the policy file reviewed periodically to determine soundness, application and elimination of those items no longer required? _____
i. Has a regimental safety director been appointed? _____
j. Does each battalion and company have safety officers and noncommissioned officers, forming a safety committee? _____
k. Does the regiment have an active safety program? _____
l. Are records maintained to indicate the effectiveness of the safety program? _____
m. Does the S1 make a continuous estimate of the personnel situation? _____
n. Does the S1 submit recommendations for policies and plans on matters pertaining to personnel? _____
o. Does the S1 supervise to insure that policies and orders are executed correctly? _____
p. Is the S1 section organized into groups with specific duties assigned to each group? _____

* * *

Well, that's it! We believe that this checklist will materially assist every S1 to better perform his duties. It is no "touchstone" to success; only training, experience and "staff talent" can assure this, but it's a big help.

In the near future we hope to publish a checklist for the S2, S3 and S4. — **Editor.**

Tribute to an Infantryman

The Infantryman is the backbone of the armies of our allies, just as he is of our own Army. Throughout the free world he is honored and respected.

Field Marshal Sir John Harding, who was recently appointed Chief of the Imperial General Staff, is the sixth consecutive Infantryman to reach Great Britain's top military position. He is one of the five youngest men to hold the rank of Field Marshal (it corresponds to General of the Army) during the twentieth century, with the exception of members of the British royal family.

The FIGHT FOR HILL 148

SFC E LAFAYETTE DEAL

A squad leader tells the story of an attack

OUR PLATOON leader spread his map out on the ground. He put his finger on Hill 148. Then he pointed out the actual hill. We could see part of it from where we stood. It was steep and cone-shaped. The map showed us that it was actually a saddle with the far peak hidden by the first.

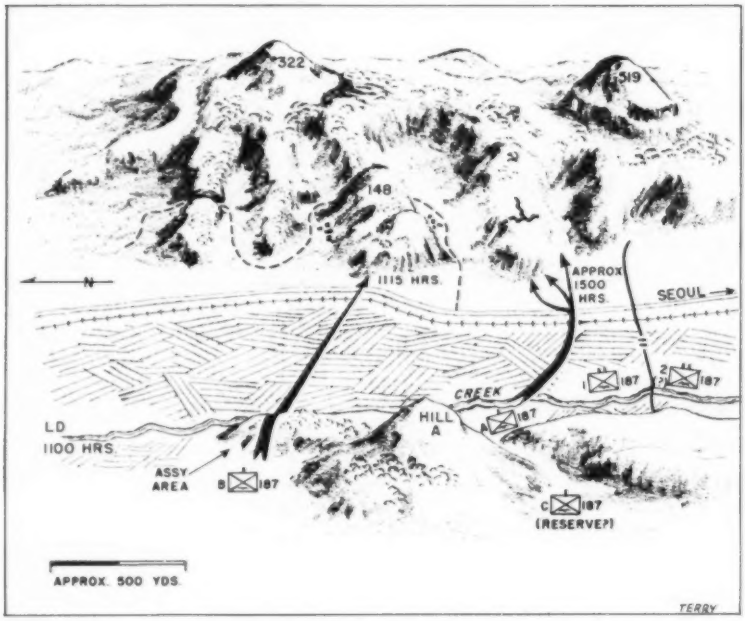
I was squad leader of the Second Squad, Second Platoon, Company B, 187th Regimental Combat Team. The mission of the RCT was to drive eastward across Korea and cut the ancient invasion route along the Uijongbu Corridor. By the evening of 26 March the Second and Third Battalions had cleared all the ground up to the Corridor and were occupying positions overlooking the Seoul-Uijongbu-Pyongyang railroad and highway.

The First Battalion had been in reserve. The men of my squad were confident and happy and had an idea that we had just about accomplished our mission. I couldn't share their enthusiasm. This thing wasn't over, but you can't let your men know exactly how you feel. The attacking battalions had been badly cut up; now it was our turn to carry the ball. During the previous night several mortar shells had hit the Second Battalion area. An undefeated enemy, who had plenty of mortars, still barred our way. I had fought the Germans in Europe, and had some idea of the trouble we would be in if we ever got caught on one of those barren Korean hills under mortar fire.

Terrain. Using the map, the platoon leader went over the terrain ahead with the squad leaders. It was not inviting. Perhaps 1100 yards of absolutely flat, cultivated ground lay between Hill A and Hill 148. A creek ran through the near side of this ground and both the railroad and the highway ran along the foot of the hill beyond the fields.

Hill 148 stuck up between two ridges. It commanded the right one and covered the foot of the left. Another ridge to the left front was very steep and overlooked 148. It was within range of a heavy machine gun (see Map A).

All of these finger ridges descended from a large mountain that looked ominous and threatening in the distance, half its top hidden in drifting rain clouds. The mountain had two peaks, the lower 322 and the higher 519. The latter was very nearly sheer that last 200 meters or so. Although covered with uneven outcroppings of rock, it was barren of any timber that might conceal an attacker. There was no doubt that 148 was just a stepping stone but one that dominated all approaches to Hill 322 and 519.



Map A — "Hill 148 stuck up between two ridges."

Preparations. The platoon leader issued a fragmentary order. In brief, we were to occupy Hill 148 and reconnoiter the two tiny settlements at its base. What would follow was uncertain. The assembly area would be the little wooded knoll on the left of the position we shall call Hill A. The LD would be the creek. The LD crossing time: 1100. Support, signal and administrative details were not yet positive. The lieutenant left us.

My squad was in fair condition. But with the exception of one rifleman and myself, the men had never been in any heavy action involving mortars and artillery. They had seen sharp skirmishing for several months and were pretty well shaken down, but I wondered how heavy concentrations of HE would affect them, especially on the barren. coverless hill like the one we could see before us.

At 1030, we moved toward the assembly area. I couldn't help thinking about a dead Chinese soldier I had come across the day before. The man had worn leather hobnailed field shoes and had an extra pair strapped on his full field pack. Since the Reds usually had only sneakers and hardly any field equipment, he might well have been a member of a new division

down from Manchuria. If so, we might have a tough time. Events proved this guess to be partly correct.

We received the remainder of the order in the assembly area. Our platoon would lead (Map B). We would attack in a platoon line, squads in column formation, with the 1st squad on the left, 2d in the middle and 3d on the right. One section of 81mm mortars would support.* Weapons Squad would support us from the LD with overhead machine gun fire.

On a signal from the platoon leader we would form a skirmish line and dash the last 100 yards to the railroad embankment. Here we would reorganize and climb the hill. We would put a sort of pincer movement on it, reorganize at the top, being careful to stay off the topographical peak. Phase II would follow: We would push across the saddle to 148. Weapons Squad would displace as soon as they saw us reach the top of the first hill (see Map B).

The rest of the company was to follow by platoon as soon as we started Phase II. Fires would lift when we got really close to the objective. We could call a platoon of 81mm mortars with our SCR 300. Packs were to be tied in squad bundles and tagged. Medical evacuation was not mentioned.

I directed each of my men to put one "C" ration meal in his pocket and fix his entrenching tool on his belt. One or two men had broken their entrenching tools and thrown them away. This worried me more than it did them. I warned them that we would probably hit an enemy OPLR** and catch mortar fire shortly afterwards. I told them to be prepared to reorganize and move out rapidly, and to dig like mad when not moving.

Moving Out. We formed up under the concealment of sassafras bushes and began to move out. The plowed ground had the consistency of pancake batter and made hard walking. When we were about 200 yards from the railroad embankment our supporting machine gun fire began to crackle overhead. A few men overcome by nervousness started running forward and soon everyone followed. This wasn't so good, but they were going in the right direction.

We arrived at the bank badly winded. After a quick reorganization, we moved forward. Exhausted by the run, the men straggled badly going up the hill. I tried to yell at my troops to guide on me, but the best I could manage was a sort of wheeze that was almost ignored.

Under Mortar Fire. When we had almost reached the top I started to reorganize my straggling troops. Just then the 1st Squad came up, with the platoon sergeant and his assistant. The platoon leader was

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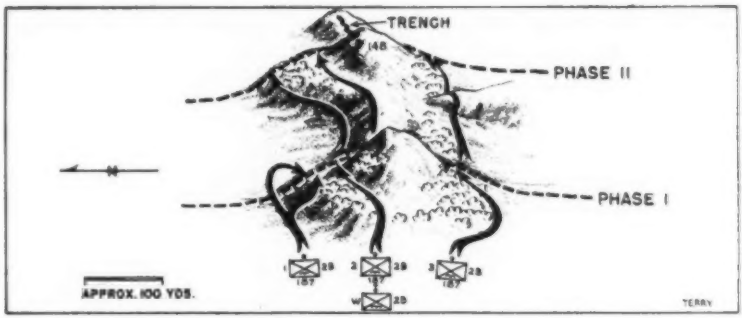
* Regimental support fires were undoubtedly available, though not mentioned by the author.

** Outpost Line of Resistance.

Publication of this article is not necessarily to be interpreted as reflecting the opinion of The Infantry School or the Infantry School Quarterly.

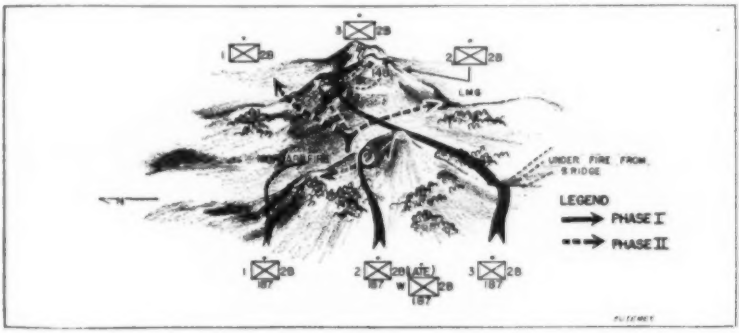


Map B — Intended Movement.

shouting to assemble here and reorganize. While everyone was standing in a bunch, my "radar-like" ear distinctly heard a mortar shell hit somewhere to our front.

Everyone was talking and milling around. The men knew what they were supposed to do and were waiting for the word to do it. Two more mortar shells registered 50 yards ahead. The platoon leader wanted to find his missing squad before moving on. Meanwhile, the soldiers were lying down, getting up again, talking quietly or just watching. They wanted either to move or get under cover. Anything beat staying here.

"Occupy that point up there," the platoon leader yelled at me, indicating the topographical crest of the ground we stood on. It lay some 40 yards to the right. I took off at a dead run yelling, "Follow me." A round dropped just behind me and someone yelled, "Medic." I kept going and found a shallow foxhole which I occupied. Soon I was



Map C — Actual Movement.

bottom man in a stack of three. The other two were from the 1st Squad. Control was about gone for a while (see Map C).

Hill 148. Venturing out I saw some men from the 1st and 2d Squads trying to form a skirmish line in the saddle between the two peaks. Knowing the consequences of standing around and being shelled, I yelled, "Come on," at the two or three men from the 2d Squad who were nearest. We made the 100 yards to the next peak in a few seconds, but I lost control of my squad once more.

The enemy began to place mortar fire on the peak we had just left. After a quick visual check of the forward slope, I lay down and began digging with both hands and feet. Men kept crashing through the brush, panting and inquiring which way to go. Soon I had rounded up one rifleman and the assistant squad leader. A man from the 1st Squad told me that one of my BAR men had been hit pretty badly, and that someone in the 1st Squad had the weapon.

Then I heard the sound of our LMG muffled by the hill. It had moved up from Hill A and was covering our advance from the right of the small hill we had crossed. The platoon leader came over and told me that the assistant platoon sergeant had been wounded. The 3d Squad was hopelessly lost. He wanted me to take my two men and occupy the peak in order to give right-flank security.

By this time we noticed that an enemy light artillery battery, perhaps 105's, was firing at us; but most of the rounds were passing over and landing in the saddle. It was not a healthful place to be. I had Pfc Newton, the rifleman with me, dig in near the peak. My assistant squad leader and I went up to the top and got behind an outcropping of rock. Now and then soil tossed up by nearby mortar bursts rained down on us.

I stopped digging and peeked between two rocks. About 700 yards away on the south ridge in A Company's zone I saw a trench system. Now and then Chinese bobbed along the communication trench, their bodies exposed from the waist up. The forward fire trench looked empty. We had been dousing it with enfilade fire. My assistant squad leader and the light machine gunner were both firing.

By now we were all looking about for the sight of another company coming up on the flanks to take some of the pressure off us. We could hear explosions behind us. Evidently, supporting troops were crossing the valley. Some of the fire on us seemed to lessen. I estimated that we had been on Hill 148 about two hours. It was probably longer than that.

The enemy now began to appear both along the fire trench and communication trench. The LMG was firing steadily. There were a couple of good boys on it. Pfc's MacAfee and Cornell were alternately digging and firing. One fired while the other dug. Both were prone behind a small clump of brush. A couple of times they disappeared in the smoke of a mortar shell, then a second later we could see a defiant stream of tracers pour out of the

smoke. It occurred to me that a water-cooled gun would have come in handy for working over those trenches.

I went back behind the peak and brought up Newton. The assistant squad leader had seen movement in a small woods to the right rear and was firing in that direction. Several figures broke from the woods. In his eagerness he edged around the rock. I yelled to him that he was exposing himself too much. A second later I flattened behind the rocks as a burst of machine gun bullets popped overhead and smacked the rocks. My assistant was lying on his back. With some difficulty we got him under cover without unduly exposing ourselves. He had three slugs in his right leg and was in considerable pain.

Success. "A" Company was now closing in on the Chinese trenches. A thin cheer drifted across the ridges, and their skirmish line broke into a mad run. The Chinese were scuttling rearward through the communication trench. Our company commander now brought up portions of the First Platoon and the 57mm section and placed them in the saddle. The Chinese were catching plunging fire. "A" Company was now running through the trenches, jabbing with their bayonets and throwing grenades into dugouts.

Soon everything became quiet. Beyond the curve of 519 hung a heavy curtain of WP smoke. The breeze brought the faint sound of distant cheering.

That ends the attack on Hill 148. The Second Platoon's role in the next day's fighting up the slopes of 322 was mainly one of support.

Summing up. Let's summarize the action. Certainly there are lessons to be learned from our mistakes as well as from the final success of the attack.

Most of our difficulties came from not planning on the possibility of unfriendly mortar fire. Prior to this attack we had encountered only sporadic mortar fire. However, it should have been expected, because of the heavy resistance encountered by other battalions. If we had not come under mortar fire, the 1st and 2d Squads would probably have advanced in orderly fashion, and the 3d Squad would have tied in.

The missing 3d Squad actually turned up on a ridge of Hill 148 well beyond our objective. As they had moved around the right side of the hill, they came under heavy fire from the south ridge. They hastily crossed the saddle and kept on going thinking that we had moved on. Having passed the peak of 148, they were again under heavy fire, this time both from front and flank. Finding an old trench, they got in and remained there. Later on the squad leader got word to the platoon leader of his whereabouts. In due time the 3d Squad extended to the right and tied in with the LMG.

It is open to question why the enemy defended Hill 148 with only an OPLR. If he had fortified and manned Hill 148, he would have had all the flat ground which was our only route of approach covered by fire. On the other hand, once he let us take 148, he gave us a good chance of penetrating his de-

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fenses. Hill 148 not only enfiladed the approaches to 519, but the ruggedness of the terrain gave many possibilities of approach because of the amount of dead space that was virtually impossible to cover by fire.

Subsequent information led us to believe that the enemy was only fighting a delaying action. The 519 and 322 system flanked a strongly-held chain of mountains to the east from which he was withdrawing. In this he succeeded, but the cost was very high. Some estimates of the enemy dead on 519 ran as high as 3,000. Had 148 been strongly held, it is this author's belief that much of this loss would have been on our side.

A lesson. If it did nothing else, the action of Hill 148 taught us one thing. When you're under fire with inadequate cover keep going. "Do something — even if it's wrong." Note that the 3d Squad, which kept moving, had no losses.

Control is a wonderful thing to have. But if you don't have it and are under fire, just keep going and try to get it later. If there is cover available, this does not necessarily apply. You can spend long periods under heavy fire and retain control if the troops are at least partly protected from fragments.

As a parting shot here are two last things I think Infantrymen should remember:

1. Go by the manual, but don't make the mistake of using it as a substitute for a head. The manual is a guide. It can't do your thinking.

2. Blacken your sights and use your sling if you have time. Just because you're in combat don't forget all about PRI.

That's it. That's what the attack on Hill 148 taught this soldier. And while Hill 148 may represent the "small" picture, it was the "big" picture to the men of my squad.

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Operation

Lt Ralph E. Ropp

ON THE NIGHT of 25-26 November 1950, the United Nations' Eighth Army stood poised only 15 miles from the Manchurian border. At 0400 a lone shepherd's horn sounded across the valley. Upon this primitive signal, a wave of Chinese Communist soldiers hit the thin line of UN foxholes. Within a short time, everyone along the line knew that a new enemy and a new war had been encountered.

It didn't take us long to know this new enemy; his habits, tactics, fears, abilities and weaknesses. And it didn't take us long to learn that he was an adept night fighter.

Extended night combat was not new to the Eighth Army. Many bitter lessons had been learned in the Pacific during World War II. Many more were to be learned in the next few months.

The night training established in our Army before the Korean conflict covered only the bare essentials of night combat and the procedures for establishing a defensive final protective line. The encounters against the CCF proved even these procedures to be inadequate.

To improve our night training techniques, the Army recently completed an extensive study of night firing at Fort Benning, Georgia. In this study known as "Operation Moonlight," both combat veterans and recent graduates of basic training fired the rifle at night. The purpose was to determine the most suitable methods of training an individual soldier to fire his weapon at night. It was assumed that the rifleman's feeling of helplessness at night and his lack of confidence in his ability to use the rifle during darkness contribute immeasurably to our present reduced effectiveness in night combat.

If the findings of this study are accepted, our training for night firing may be completely changed. The results of "Operation Moonlight" indicate that four phases of preliminary instruction are required: Night familiarization firing, daytime corrective firing, night vision training, and applicatory night firing. After finishing these four phases, the soldier would fire a proficiency course to determine his ability.

Obtaining maximum use from natural moon and starlight, this Infantryman fires his weapon by sighting with both eyes open over the top of his rifle. The flash hider prevents temporary loss of night vision.

Moonlight

Night Firing —A New Approach

Night familiarization firing: The purpose of this exercise would be to familiarize the student with the problems encountered in firing at night.

Using "M" type silhouette targets at ranges of 25, 50, and 75 yards, the firer would be encouraged to engage the target in any manner that he desires.

If there is no more light than that furnished by a brilliant quarter moon on a clear night, the firer would first fire at a range of 25 yards. After firing eight rounds, he would move forward to score and paste the target and to move it to the 50-yard mark. After firing eight rounds into the target at 50 yards, he would again move forward to score and paste and return the target to the 25-yard line for the next firer. If, on the other hand, there is more light than that furnished by a quarter moon, the first target should be engaged at a range of 50 yards and the second at a range of 75.

The firing exercises should be followed by a critique stressing the facts that BOTH EYES should be

kept open during night firing and the head held high to enable the firer to see the target. When holding his head high and both eyes open, the average firer has a tendency to bring the muzzle of the rifle up to the line of sight and fire high and slightly to the left. He should, therefore, keep the rifle aimed LOW and slightly to the RIGHT.

Since the muzzle flash momentarily blinds the firer, the use of a flash hider would improve his accuracy and rate of fire.

Daytime corrective firing: Here the student should be given practice in firing with his head high and both eyes open to determine how low he must hold the rifle in order to hit a target when firing in this manner. At this time the instructor can detect and correct night-firing errors. In order to simulate night firing conditions, the weapon should be stripped of its sights. This gets the student accustomed to FEELING the correct position instead of using sight alignment. He should fire at a range of 50 yards, using the B-type bull's-eye target.

Night vision training: In this phase the soldier would be taught the principles and techniques that will assist him in detecting and identifying targets at night. If possible, this training should be conducted in a blackout building equipped with shadowgraph boxes, white screens, red lights, charts and other training aids that will demonstrate the principles of night vision.*

Applicatory night firing: This phase would consist of firing during hours of darkness to practice the lessons previously learned.

After finishing these four phases, the student would go through a proficiency course to determine whether he has mastered night firing. This course would be run on a firing range having stationary and moving targets at 25 yards range, five additional targets at 50 yards, and five more at 75 yards. These targets could be "M" type silhouettes mounted so that they can be moved across the front by means of cables operated from behind the firing line. To represent the enemy firing automatic weapons at ranges beyond the range of normal vision, the range should also include five flashing targets stationed at 100 yards. The firer should be required to engage targets, under varying degrees of moonlight, that an average soldier would reasonably be expected to see under those conditions. He should be required to engage the flashing targets under all conditions.

These "findings" and proposals can in no sense be considered definite at this writing. They do, however, give an indication of a trend and show the very real interest the Army has in increasing the overall effectiveness of night operations.

* Section 1, Chapter 4, FM 21-75, Combat Training of the Individual Soldier and Patrolling, Oct 1950, outlines the subject matter and contains diagrams of the charts needed. Section II, Appendix III, FM 21-75 describes equipment and exercises for practical work in these subjects.

how would YOU do it ?

Lt David R. Hughes

In this issue begins a new regular feature that allows every Infantry leader to test his leadership and tactical knowledge. Read the situations, study the sketches, and see if you come up with Lt Hughes' solutions to these actual tactical problems. — The Editor.

SITUATION 1

You are a rifle platoon leader planning an attack against Hill 300. The enemy occupies hasty positions on a long sloping hill. You decide to attack from the left flank, approaching through a covered and wooded ravine (see Figure 1). The bottom of the ravine is 475 yards from the nearest enemy positions on Hill 300. The woods extend about 75 yards up the slope, so that the edge of the woods is approximately 400 yards from the enemy position. The ground offers no other distinct cover or concealment.

PROBLEM 1

Where will you place your assault position? At A, B, or C?

SITUATION 2

The assault is now 75 yards short of the crest and is going well. You are the weapons squad leader. Your two light machine-gun teams have been delivering overhead fire in support of the assault from Knoll X 400 yards from the platoon objective (see Figure 2). You see that the fires of your left team will be masked by the assaulting skirmish line in about 10-15 seconds. Your other gun (on higher ground) will be able to fire much longer.

PROBLEM 2

When and how will you, as weapons squad leader, displace your teams to the objective?

SITUATION 3

You, as rifle platoon leader in this assault, were given the mission to "seize Hill 300 and continue the attack to the north *on order.*"

PROBLEM 3

Your assault has succeeded and you have just signaled the base rifle squad to halt the assault. What will you do in the next few minutes?

SOLUTION 1

Neither of the covered or concealed positions (A or B) is the best place for the assault position. You choose Position "C," only 150 yards down the slope from the enemy positions, because you want to move as close to the enemy as your indirect supporting fires will permit, without receiving excessive casualties from your own fire. *All* of these fires (105's, 42's, 81's, 60's) continue to pound the objective and neutralize the enemy fire until the assault begins. They are then "phased out," larger calibers first, and lifted or shifted away from the platoon assault line.

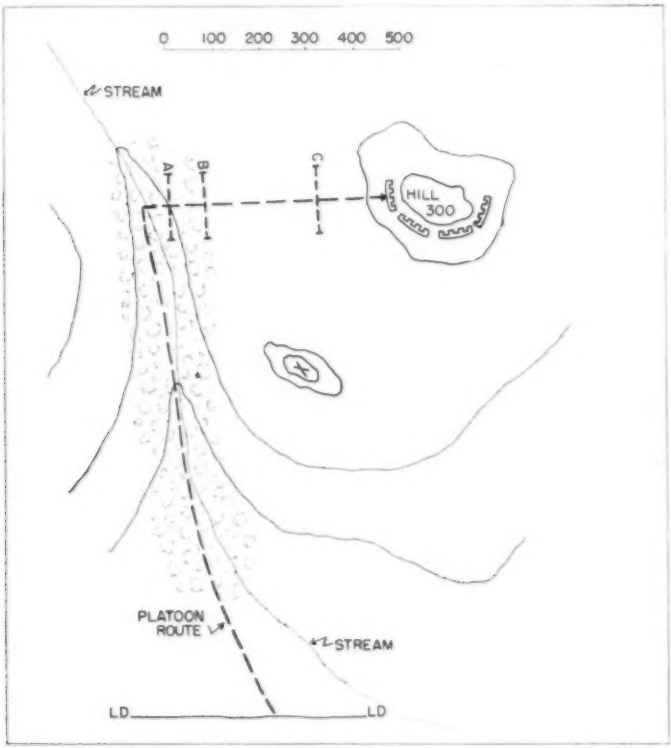


Figure 1.

Experience indicates that even a few casualties from friendly fires is more than offset by the advantage of leaning into your supporting fires.

Understand that in selecting "C" as your choice you will probably plan to deploy into either a "V" or a "line" formation in the edge of the woods in the vicinity of "B" before moving forward to Position "C". However, in order to "lean into your fires," you will actually begin your assault at Position "C".

Position "B" is 400 yards from the known enemy positions. It is approximately 250 yards from the bursting radius of the heaviest indirect fire. If this position were used as the assault position and assault fire taken up by the platoon at this point, the assault would be excessively long. Control of the skirmish line would be extremely

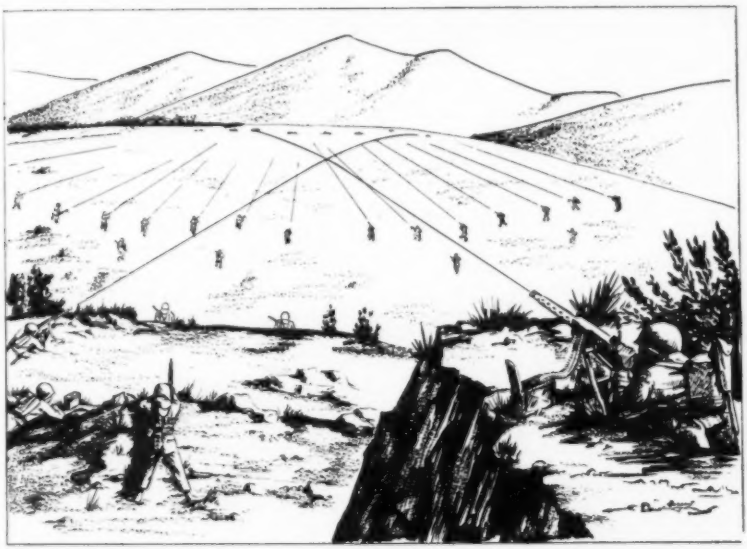


Figure 2.

difficult over this distance. The result would be an excessive expenditure of ammunition and less effective fire initially by the platoon.

Position "A" is 475 yards from the known enemy positions. It is a poor choice for the same reasons that make "B" an undesirable position. Also, there is a greater distance to travel. Added to this is the difficulty of control that would arise in moving in the assault formation through the woods.

SOLUTION 2

You order the left team out of action now (slightly before its fires are masked) and displace it rapidly forward. You move with this gun. The team leader (gunner) of the other team will continue to fire until his fires are masked, and will then displace rapidly.

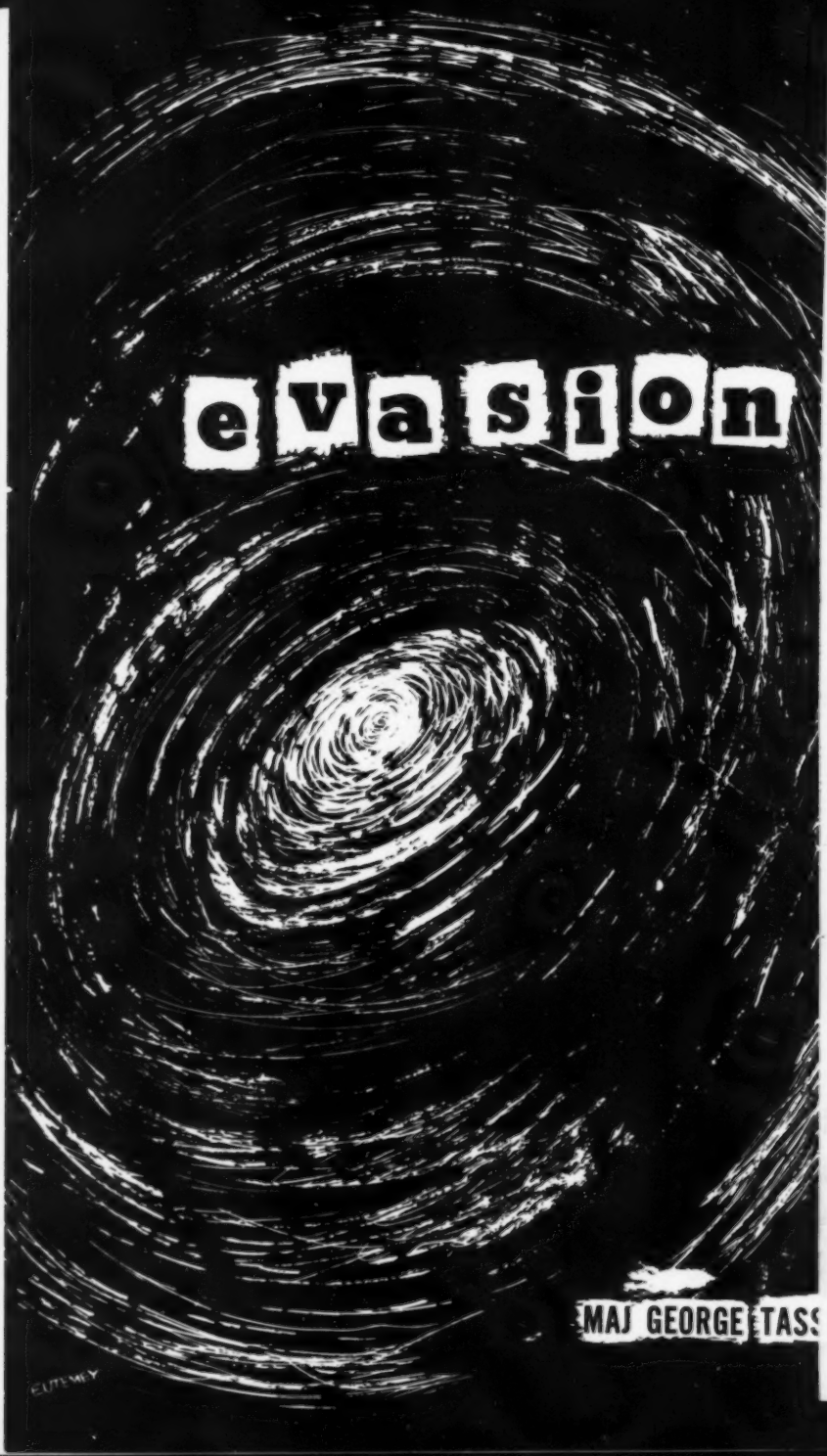
SOLUTION 3

You make a quick estimate of the situation and terrain analysis of the objective you have just seized. You change or modify your reorganization and consolidation plan if necessary. You then complete temporary consolidation by:

1. Getting the rifle squads and organic and attached weapons into the best positions to resist counterattack, according to your new estimate.

2. Tying in your flanks with any immediately adjacent platoons. You complete your reorganization by:

1. Replacing key leaders who have become casualties.
2. Evacuating casualties and prisoners.
3. Redistributing ammunition.
4. Making a status report to the company commander.
5. Starting further reconnaissance and planning to continue the attack, when ordered.


evasion
MAJ GEORGE TASS

"He knew that from the moment he was cut off from his unit he had one mission . . .

"WE'RE FINISHED. We've been cut off. We'll be captured."

The sergeant looked coolly at the soldier who had said this. "Sure we're cut off," he said, "so what! Now we're going to get back to our lines."

A few days later the two men had made their way back and rejoined their unit.

To the inexperienced soldier the words "cut off" meant panic and despair, but to the man who kept his head they had only one meaning — evasion. He knew that from the moment he become isolated from his unit he had one mission — to evade the enemy and return to his own lines.

Evasion requires special techniques and a special determination. It is a dramatic job that an American soldier may undertake with zest and grim humor. His job is to fool the enemy, avoid him and make a sucker out of him. It is not a time to lie down and worry, but a time for action.

A soldier who has been cut off from the enemy has no alternative but to attempt to return to his own lines. It is not only his duty but it also is in accord with his interest in his own life and happiness. Our experiences in recent wars should have convinced everyone that capture will not mean a life of ease and luxury.

But isn't it very difficult to evade the enemy when he is lying between you and friendly lines? The answer is a firm "no," if common sense and a few simple rules are followed. World War II and Korea abound in incidents where men who were cut off successfully returned to their own lines.

Let's look at a few of these incidents. In August 1950 the 1st Battalion of the 23d Infantry, 2d Inf. Division, was defending a wide frontage along the Naktong River in Korea. During the early morning hours of 1 September, a North Korean regiment crossed the river and penetrated between two companies of the battalion, cutting off many men. Although these men were within enemy-held territory, they were not far from our own lines and were determined to return. Knowing that the enemy was continuing the attack and moving rapidly along roads and trails, these men stayed on the high ground and avoided trails being traversed by the enemy.

Soon small groups of men under admirable leadership started drifting back to our own lines. They had started moving early, taking advantage of the noise and confusion of battle and of the fact that they were still relatively close to friendly lines. If they had waited until the enemy had stabilized his position, their chances of making a successful

evasion would have been much smaller.

Another successful evasion was performed during the period of 1 through 4 September 1950 by one of my men who was manning a light machine gun along the Naktong River. Just before dawn on 1 September he found himself engulfed by the North Korean hordes, for they had crossed the river and were swarming over "friendly" hills, roads and trails by the thousands. This man made an estimate of the situation and after evaluating his chances of evading the enemy, he quickly seized the initiative and made a determined effort to slip back to friendly lines. He accomplished this miraculous task by moving unnoticed among the enemy during the confusion of battle.

The area was being peppered by friendly artillery and heavy mortar fire and visibility was limited by semi-darkness, smoke and early morning haze. After dismantling his machine gun and throwing vital parts of it into the river he made his way cautiously through rubble and the dead. Three days later (after I had listed him as missing in action) he came stumbling into our new defensive area tired and hungry, but ready to continue the fight. His newly acquired knowledge of enemy tactics was passed on to the rest of the company, and such information added materially to the bettering of our defensive positions.

How do we go about evading the enemy? Although few of us feel like heroes of a spy thriller, we can all prepare ourselves for a successful evasion if we learn and remember a few simple tactics. Anyone who has played hide-and-go-seek as a child knows some of these methods. Evasion in war should be accomplished with the same care and if possible with as much zest.

Let's take a concrete example. You are a platoon leader in combat who has been cut off from the main portion of your platoon and left with only seven men under your immediate command. You find yourself on top of a ridge that has been by-passed by the enemy. You and your men become aware that your parent unit has been driven back at least two terrain features. The enemy is in the valley below, but he has not seen you or your men. What steps should you take?

Your first step should be to make sure that your men *avoid panic*. You should direct your men to lie down and not to make any unnecessary movement. Then you should tell them exactly what has happened and that you are going to lead them back safely to their own lines. You must give them confidence, explaining that others have succeeded in returning safely to friendly lines.

It is absolutely important to stay cool and alert. Take the case of a sergeant who was in command of an outpost near a stone farmhouse at Anzio in the spring of 1944 when two platoons of Germans conducted a surprise raid on the house. Two of the men in the outpost were killed, and the rest were captured. Meanwhile the sergeant, seeing that the situation was beyond control, quietly crawled upstairs and lay under the roof of the house. The

ermans made preparations to blow
) the farmhouse, but the sergeant
y still, knowing that he had a
)od chance of surviving in the
urdy building. When the explo-
on went off, he suffered only a
ight concussion. He remained
mong the debris until the next day,
/hen he slipped safely back to
riendly lines.

To return to you and your seven
nen, after you have gained their
onfidence, you must *take stock* of
'our ammunition, weapons, water
upply and clothing. All available
veapons and ammunition should be
listributed equally among the men,
and fallen comrades should be
stripped of any usable ammunition.
It's of no use to them, but it may
nean life or death to you or your
nen.

Above all, you must arm and pre-
)are yourselves for any eventuality.
If it is cold you should have your
nen take clothing from the dead.
Other equipment such as water can-
eens and first aid packets should
also be sought. You should be care-
'ul not to dress in enemy or civilian
:lothing, for if captured in this at-
ire you may be regarded as a spy.
f possible, even in extremely cold
veather, combat boots should be
vorn rather than shoe packs since
hey will cause your feet to perspire
ess over long marches and the
'hances of frozen feet will be les-
ened while at halt Each soldier
hould keep an extra pair of socks
iext to his body to dry them out,
and socks should be changed at least twice a day and the feet massaged.

You must now make a *visual reconnaissance*. Determine where you are in relation to the position of the main body of friendly forces. If you have a compass, you should shoot an azimuth to these forces and then set it for night reading on this azimuth. If you have a map, you should study it and choose a tentative route to follow. If you have no map or compass, you need not feel dismayed for there are numerous other ways to orient and guide yourself. You can use the sun, the stars, terrain features, the flow of streams and rivers, and roads and railroads as direction guides. Watch the pattern of friendly artillery fire, listen for concentrated small arms fire, and notice and remember from what direction these sounds come. At night, flares, searchlights and tracer fire employed by friendly forces may assist you in determining direction. If possible, use more than one means so as to double-check your sense of direction.

Now comes the time to move out. You have planned your route as thoroughly as possible; you and your men are calm and alert. You have prepared yourselves physically and mentally for the long, arduous trek to friendly lines. The men have been divided into pairs or small teams, for the fewer men

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A good staff is indispensable . . . it has the advantage of being more lasting than the genius of a single man.

— *Jomini*

there are in each group, the less chance of detection by the enemy.

Before starting for friendly lines the small groups must be well briefed by the platoon leader. Each team must know what it is to do should it be discovered by the enemy. Every man should be told exactly what direction he is to take. There should be no doubt in anyone's mind that his duty is to return quickly and safely to friendly lines. Each member of the team should be reminded that in case of capture he should give no military information other than his name, rank and service number.

On the move, keep constantly alert and avoid enemy patrols or troop concentrations. Move primarily at night and stay away from trails and roads that appear to be traveled by the enemy. You have one mission — to return to your own lines. Don't engage enemy patrols, no matter how small they may be. In Korea, soldiers moving behind enemy lines have on occasion laid down and played dead upon the approach of the enemy. This should be done only if concealment is impossible and you have no weapon for the enemy may discover the trick or wish to "requisition" your clothes or weapons.

The important thing to remember is that your mission is not to fight behind enemy lines or to commit sabotage, but to evade the enemy and return to friendly lines. The Infantryman's chances of success at sabotage are very small. This job should be left to specialists who have been trained for this kind of work.

All civilians you encounter must be treated as enemies. Even if their attitude is not hostile, they cannot be trusted to keep silent. If you are seen by a civilian, start moving in the other direction as swiftly as possible. A good trick is to confuse him by walking in one direction, and when out of sight reverting to your original direction. In a sense, children are among your worst enemies. Although they may appear friendly, they are naturally curious and will quickly report the presence of a stranger. Civilian houses and other installations should be approached only when you cannot find food elsewhere.

If you have been fighting in the same area for some length of time you should have noticed where food is readily available. It is often possible to subsist without seeking civilian help. In Korea, for example, the natives bury potatoes in the ground with a light dirt covering. This is done to keep them from freezing. Try to scrounge a little food even if it is only one potato or the root of an edible plant. Eat whenever you can. You will need all the food you can get, for you will be using a great deal of mental and physical energy during the journey. Watch for such live game as pheasant, deer and rabbits; but keep your daylight movement to a minimum.

Experience has shown that by avoiding movement during the day, a man can avoid capture for long periods of time behind enemy lines. During the summer of 1950 one sergeant of the 5th Regimental Combat Team lived alone in the hills near the Taegu-Pusan Perimeter for a month. During this time he scrounged and received food from friendly civilians, holed up in

caves during daylight and traveled at night. He even had to extract a bullet from his own shoulder before he was physically able to evade the enemy and return to his own lines.

During the daylight hours it is best to lie low in a well-concealed position, preferably on high ground. This time should be spent selecting a tentative route for the night, and you should make sure that you have that route well set in your mind. Your position should allow you good observation in case the enemy discovers you. If you are detected you have no alternative but to fight with your weapon and then evade the enemy as fast as possible.

Evasion of the enemy is a possibility if you plan every step thoroughly. First, you must gain the confidence of your men and make them feel that you will lead them to safety. The men must be in the best mental and physical shape possible. Small details can be tremendously important and should not be overlooked. A full canteen of water, a first aid packet, a cartridge belt filled with ammunition, an extra pair of dry socks, or a small bottle of halazone tablets may mean the difference between capture, death, or a successful return to your unit.

To be properly prepared for a successful evasion, a soldier must learn *how* to take care of himself. Everything he does in combat is based on what he has learned or failed to learn in garrison. If you have the job of training men, be objective in your training and demand high standards, for the lives of your men depend on their training.

If cut off from friendly forces, it is the duty of you and your men to return safely to your unit and fight. There must be no other alternative. The success or failure of a unit in combat may depend on your timely return to friendly lines.

I have outlined some points to consider in evasion; the rest is up to you. Make an intelligent plan and follow it; if necessary, alter it to suit the various conditions you may encounter. The American soldier prides himself on his courage and ingenuity. In the past he has had great success in evading the enemy when he has been cut off from his unit; if he is called upon to do the same in the future, his success should be even greater.

Going Somewhere?

Well, don't go until you let us know. That way you'll be certain to get every issue of THE INFANTRY SCHOOL QUARTERLY on time.

fighting backwards

Capt Richard E. Cross

✔ The delaying action pays dividends

TO WIN TIME for tomorrow's success it may sometimes become necessary to delay the enemy today. Although no Infantryman relishes the idea, there are times when some of us may have to wait and fight — fight to delay the enemy's advance. Why? Delay may be used for any variety of reasons — all good.

It may provide the time needed to bring up reinforcements, or to enable a main body to strengthen its position on favorable terrain. It could be used to trade space for time; to canalize the enemy's advance; or we might even delay to mislead and deceive the enemy as to our true intentions. Properly used, delay, like any other military maneuver, can be of tremendous value to a commander.

Let us briefly examine a hypothetical case. Take, for example, the United States Seventh Army — the principal guardian of Western Europe. It can be reasonably assumed that it faces a force considerably larger than itself. In the event of aggression it might be presumed that the Seventh Army would initially fight a large scale delaying action east of the Rhine River to gain the time needed to permit the NATO nations to muster their forces and fight back.

To many readers the delaying action described in this article brings to mind delay in the face of pursuit, rather than what we could term "book" delay of a more conventional nature. The former, it must be remembered, is designed for a particular situation and terrain. Again, I repeat, this is a hypothetical case, but it does illustrate that it is better to be prepared to fight a delaying action than wait until an enemy is on top of you and then attempt to execute an orderly withdrawal. This takes planning, training and rehearsal; but more about this aspect of the matter later.

The World War II German High Command felt that a delaying action was one planned to facilitate orderly retirement and to wear out the enemy. The Commanding General of the 1st German Parachute Division, General Heidrich, felt that a delaying action was merely a concept for commanders, and that as far as the troops were concerned, they would fight in accordance with the generally accepted rules of a defensive battle. He said the purpose of the action was to delay the enemy's advance, to inflict casualties, and to deceive him in every possible way, and that in order to execute this proper-

ly, a commander with initiative and adaptability was essential.

"Our" Principles of Delay. The formal concept of defense is outlined in seven principles. However, several principles (or guides) necessary to fight a delaying action do not fall within the scope of these. Having served as a company commander in the 26th Infantry Regiment in Europe, where, after the outbreak of the Korean War, we began extensive training in delaying type action, I became familiar with the necessary logistical, tactical and organizational difficulties encountered in preparing a regiment for the defense in depth of successive positions. (Here again I think it well for me to point out that many people feel that I am speaking of the "delay" necessitated when an enemy is in pursuit as distinguished from conventional "delay." We, however, made no such distinction on my level.)

Here are the eight principles we tried to follow in preparing a delaying action. It should be noted that organization of key terrain features, depth and flexibility, are three of the six principles prescribed in our current Infantry field manuals. (And it could easily be said that the balance are merely modifications of existing principles.)

Security is gained by aggressive motorized patrolling to front and flanks, use of liaison aircraft (supplied by division), TAC Air, and local outposts. Contact with hostile forces once gained is not lost.

Organization of Key Terrain features is essential. Particular attention is given to those features which block the main route of approach and provide long range fields of fire, long range observation, concealment, and covered routes of withdrawal.

Depth is dictated by the terrain over which delay is anticipated, enemy capabilities and our own strength and mobility.

Mobility equal to, or greater than, that of the enemy is required for a successful delaying action.

Long Range Fires are needed to halt, confuse and disorganize the enemy as far forward of the delaying positions as possible. Such fires are obtained through carefully coordinated employment of artillery, tank, mortar, 75 and 105mm recoilless rifles, and machine guns (which open at maximum ranges).

Surprise is gained in the selection of different types of positions at different intervals, use of obstacles, employment of limited counterattacks, ambushes, sudden massing of fires and use of smoke.

The author of this article wishes to thank Colonel J. F. R. Seitz, now Brig Gen Seitz, Commanding Officer of the 26th Infantry Regiment in the early days of hostilities in Korea, and who was responsible for the development and progress of the regiment in delaying action tactics. General Seitz was assisted by Lt Col Samuel H. Hays, then regimental S3. Lt Colonels James A. Scott, Arthur J. McBride, Neil G. Stewart, and Harley T. Marsh were battalion commanders during this period and added greatly to the knowledge and experience gained in the organization and employment of Infantry units as delaying action forces.

Flexibility is achieved through adequate means of communication, mobility, deployment in depth and use of reserves.

Control must be maintained, and can be achieved by use of phase lines, check points and adequate communications.

It should be understood that a delaying action is rather a unique form of defensive action. It must be highly mobile and possess a great amount of flexibility, while a normal type defense is more static and not as mobile, except when units are maneuvering within the battle position to eject an enemy penetration.

Within the Infantry regiment a delaying force may be organized into a reinforced battalion, company, or even a platoon (if the mission can be accomplished with a unit of that size).

Three methods or combinations of tactical employment are:

1. Offensive action.

2. Defensive action on one position.*

3. Defensive action on successive positions.*

Flexibility. The organization of units within the Infantry Regiment for a delaying action is highly flexible. No definite pattern in the utilization of personnel, weapons, communications equipment and transportation can be specified as the correct and **only** solution. Fire power for mobile delaying forces is naturally built around the long range fires of the medium tank, 75, 105 and 57mm recoilless rifles. These four principal weapons are supported by the indirect fires of the 4.2-inch, 81mm, and 60mm mortars, and also artillery and TAC air. Local security is provided by machine guns, rifles, carbines and 3.5-inch rocket launchers. Platoon and company task forces make up the composition of delaying units within the Infantry battalion.

Reinforced Rifle Platoons. The rifle platoon (reinforced) may be utilized as a separate delaying force when the frontage is extended, and the company or battalion has numerous roads to defend from possible enemy penetration. Also, the platoon may have the mission of defending road blocks leading into the battalion zone from the flank. The use of a reinforced platoon as a separate delaying force is not advisable except in favorable terrain. Regardless of type of terrain, the platoon should remain in contact for only short periods of time after contact with superior enemy forces. Loss of personnel and equipment is very probable in a separate mission by a reinforced platoon, and precautions should be taken by not over exposing this size unit for any great length of time.

A possible organization for the platoon fighting a delaying action could consist of an Able, Baker and

* Ambush may be used with this method.

Composition of Task Force	Transportation
Rifle Platoon	One 2½-ton truck with trailer
Section of tanks or section 75 or 105mm recoilless rifles	Two M47 medium tanks or organic transportation for recoilless rifles.
Section or squad of heavy caliber .30 machine guns	One or two ¼-ton trucks with trailer
*One 57mm recoilless rifle	One ¼-ton truck with trailer
*One 60mm mortar squad	One ¼-ton truck with trailer
One section of 81mm mortars	Two ¼-ton trucks with trailer
One demolition specialists, pioneer and ammunition platoon	
One medical aid man	

* Optional

This task force is organized into three teams. The Able, Baker and Charlie teams are as follows:

Able Team	Baker Team	Charlie Team
Platoon leader	Platoon sergeant	Assistant platoon sergeant
One tank or 75 or 105mm recoilless rifle	One tank or 75 or 105mm recoilless rifle	One demolition expert
One rifle squad	One rifle squad	One rifle squad
Rocket launcher team	57mm recoilless rifle squad	One LMG, platoon weapons squad
Heavy machine gun squad or section	One LMG, platoon weapons squad	
	60mm mortar squad	

Figure 1.

Charlie Team (see Figure 1). Prior to contact with the enemy, Charlie team prepares obstacles in front of the initial platoon delaying position. The type of demolition or mine field prepared as an obstacle to the enemy will depend upon the nature of the terrain and condition of road approach to the delaying position. Demolitions are prepared under the supervision of the assistant platoon sergeant and demolition specialist. The obstacle plan is limited by the amount of mines and demolitions which can be carried in the 2½-ton truck and trailer attached to Charlie team. A small mine field such as a daisy chain, a blown-out culvert, burned wooden bridge, or small abatis is about the extent of the demolition work that can be established by Charlie team.

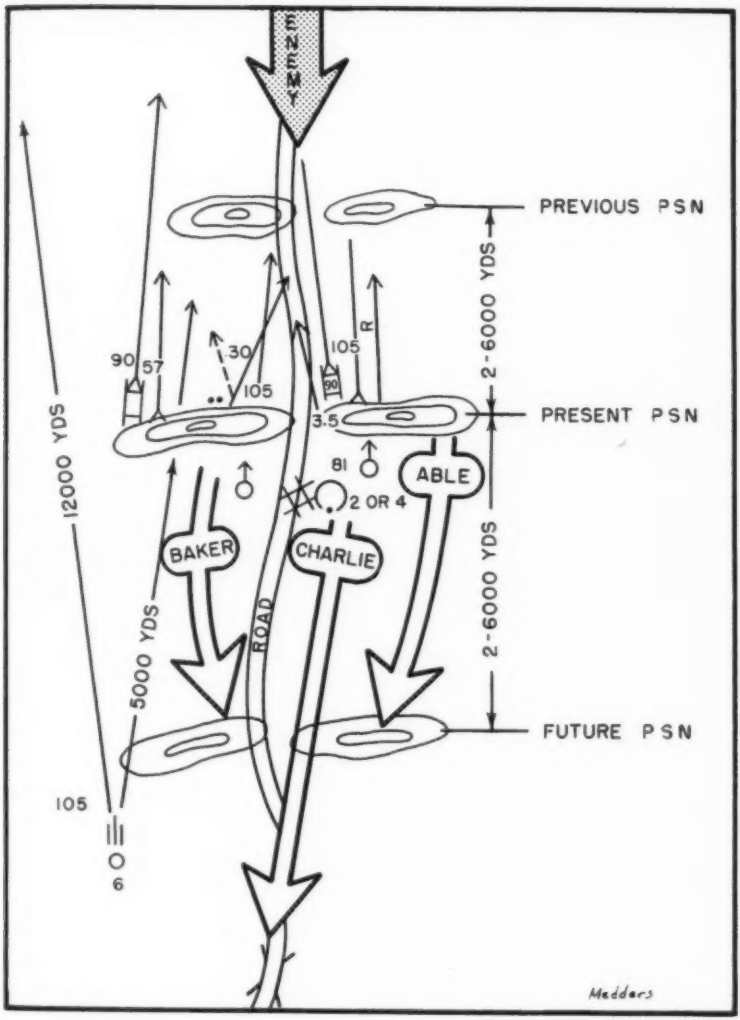

Figure 2.

Reinforced Rifle Platoon as a Separate Task Force.

A demolition squad of the 2d U.S. Infantry Division carrying explosives.

Upon preparation of an obstacle in front of the initial delaying position, Charlie team withdraws to the rear and continues to prepare an obstacle or obstacles in front of or to the flank of the next delaying position that will be occupied by Able and Baker team: Charlie team will activate the obstacle in front of the initial delaying position prior to withdrawing to the rear. (Figure 2.)

Necessary personnel from Charlie team will be left in the vicinity of the obstacle to activate the obstacle if the situation requires that an obstacle be accomplished at the time of enemy contact. On the approach of an enemy force, both Able and Baker teams will engage the enemy by long-range fire at maximum range. The enemy normally will halt, deploy and reconnoiter the positions from which they are receiving fire.

Once the enemy is able to initiate combat against the delaying position and the pressure of returned fire is increased, Baker team will withdraw to the next delaying position under cover of Able team. The next delaying position is at least 1000 to 2000 yards to the rear, and covered by the obstacles which Charlie team* has already prepared. Able team will continue to delay until the position appears no longer tenable.

When it appears that an envelopment or a frontal assault is about to begin, Able team should withdraw to the rear and the next delaying position, unless ordered to hold the ground for a specified time. It may take five to ten minutes for a platoon to disengage from a position. To let an enemy force get on top of your position before completely disengaging from a position will result in the loss of personnel and equipment. All teams will utilize tanks and trucks for transportation to each successive position.

An aggressive enemy may cause Able and Baker teams to withdraw simultaneously, employing fire and movement immediately after contact is made. Each team will cover the other on any type terrain which affords an intermediate position between the preplanned delaying positions.

Positions occupied by Able and Baker teams should be mutually supporting and should have covered routes of withdrawal. Crests of hills, front edges of towns and bridges make good locations for delaying positions. Due to the limited capability of the reinforced platoon's fire power, each successive position after the initial positions should not be held for a long period of time, particularly if the enemy is highly mobile with armored vehicles.

The platoon conducts reconnaissance to its front and flanks by utilizing available personnel with the rifle squads and using two or three ¼-ton vehicles assigned to the platoon. On enemy contact the reconnaissance personnel will return without disclosing the location of the position to the enemy.

Communication with the company commander, or battalion commander if the platoon is under battalion control, is maintained by an AN/PRC 10. Distance requires a long antenna and a position on the highest ground in the vicinity. Communications within the teams can be maintained by using AN/PRC 6 radios, or between Able and Baker teams by tank radio as an alternate means. Wire is normally not used between a platoon and its higher headquarters when it acts as a separate delaying force, but the use of wire should be encouraged within the position from mortar observation posts to the actual site of emplacement.

The assistant platoon sergeant may be used for reconnaissance in addition to his duties as the Charlie team commander. His specific

* The Infantry School feels that Charlie team should cover the withdrawal of Able and Baker teams by fire.

duties in reconnaissance would be to look for new successive delaying positions to the rear if the platoon leader has had no prior opportunity to reconnoiter for suitable delaying positions.

Reinforced Rifle Company. Within the Infantry battalion the reinforced rifle company is probably the most effective force to be used in delaying action. It may be used on a separate mission or as one of the subordinate units within the organization of a reinforced battalion. The company may be employed in depth on successive platoon positions. Employing the company in depth provides security from surprise attack. In addition it facilitates control of supporting fires between positions. The column formation provides the company commander with an easy method of maintaining control.

Road-block positions prepared by the company are similar to those mentioned for a reinforced platoon on a separate delaying mission. Supporting squads from the division engineer battalion, pioneer and ammunition, or antitank and mine squads will emplace obstacles in

Organization of a Reinforced Rifle Company for Employment on Successive Delaying Positions

Normal Organization Attachments:

Rifle Company, motorized, with seven 2½-ton personnel carriers. (Organic to the Infantry regiment or to a transportation truck company.)

Platoons or section M47 medium tanks and/or platoon section of 75 or 105mm recoilless rifles.

Section or platoon of 81mm or 4.2 inch mortars.

Squad from pioneer and ammunition platoons or antitank and mine platoon.

Intelligence section, battalion headquarters company, or one squad intelligence and reconnaissance platoon.

One artillery forward observer.

The company is organized on three successive delaying positions as follows:

First Position: Rifle platoon, section or platoon of tanks, section of heavy machine guns caliber .30, 57mm recoilless rifle squad, section or platoon of 81mm mortars or 4.2 inch mortars. 60mm mortar squad.

Second Position: Second rifle platoon, recoilless rifle section or platoon, 57mm recoilless rifle squad, 60mm mortar squad.

Third Position: Third rifle platoon, 57mm recoilless squad, 60mm mortar squad.

Figure 3

front of or in the vicinity of the delaying positions. Obstacles should cover approaches to the flanks as well as to the front of delaying positions.

Reconnaissance and security may be provided by intelligence and reconnaissance units. If no reconnaissance units are available, the commander must provide mobile reconnaissance units from within his company. Motorized patrols should establish dismounted observation posts within visual contact of the positions to warn the commander of the delaying force of any approaching enemy.

Communications within the company will be maintained by the AN/PRC 10* radio. It goes without saying that the company commander should be up front in a position where he can best control the operation. Contact with higher headquarters will be maintained by utilizing the AN/PRC 10 radio. The AN/GRC 7, organic to the tank platoon, and the AN/PRC 9 of the field artillery forward observer may be used as an alternate means of communication with a higher headquarters.

On contact with the enemy, the delaying position will effect maximum delay until ordered to withdraw by the next higher commander. The leading element of the enemy force should be fired on at maximum ranges and withdrawal should be initiated when the enemy has prepared for an assault or the threat of envelopment is forseen.

The first elements of the delaying force to be withdrawn from position will be the artillery (1). The 81mm or 4.2-inch mortars (2) will be next (see Figure 4). The first rifle platoon will then withdraw in personnel carriers, leaving a squad to protect the tanks and other supporting weapons still in position. The tanks and heavy machine gun section will withdraw last. Any demolition personnel left behind to activate the obstacles will be transported to the next delaying position by tank or other vehicle. If the enemy attack is aggressive against the delaying position, it may be necessary for the tanks and heavy machine gun section (which has dash mounts on its vehicles) to withdraw by bounds.

In withdrawing from the first delaying position the rifle platoon will occupy a new position to the rear of the third platoon in line. The mortars will move to rear of the second delaying position to give support to the second position. The heavy machine gun section will move to the second delaying position and occupy preplanned position selected by the platoon leader of the delaying position. The tanks will move to the second position if terrain permits and no 75 or 105mm recoilless rifle section or platoon is present. The movement of the 75mm and 105mm recoilless rifles will facilitate the resupply of the tanks as required. If 75 or 105mm recoilless rifles are attached to the rifle company and are in position on the second delaying position, the tanks will move back to the third or fourth delaying position depending on the decision of

* Equipment modification list (EML) basis.

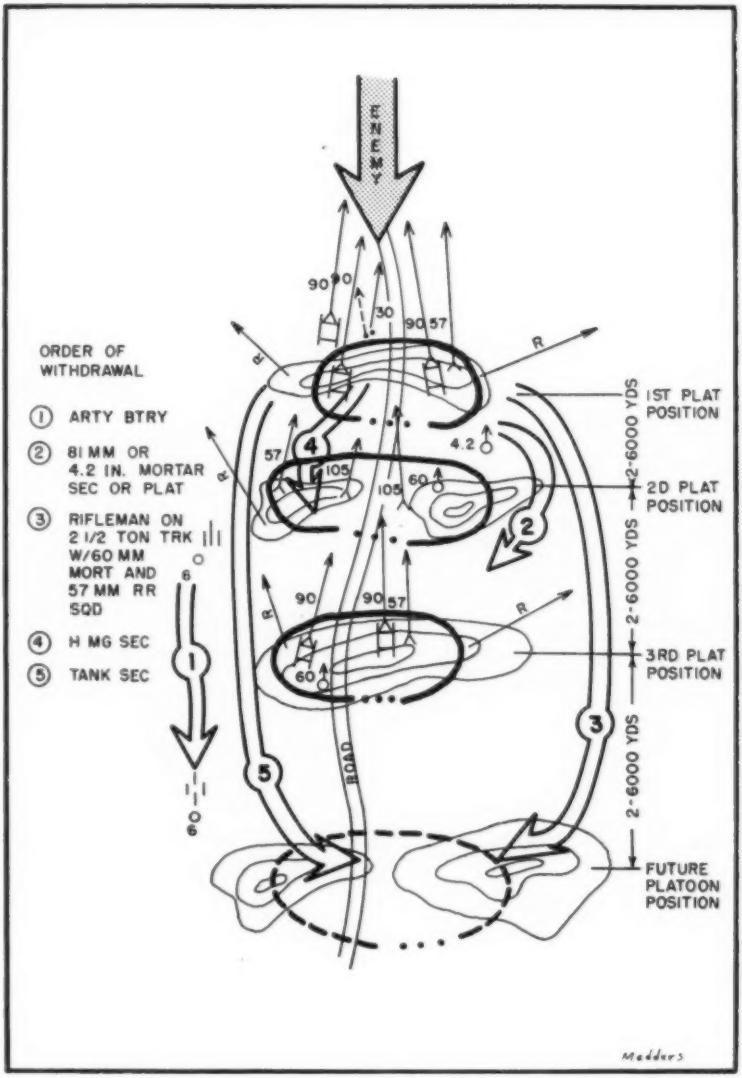

Figure 4.
The Reinforced Rifle Company Delaying on One Road.

the company commander. This operation can be as flexible as the commander wishes to make it. The recoilless weapons and tanks can be employed together, apart, or as mutual support for each other.

Reinforced Battalion. We have discussed the platoon and company as separate units in a delaying action. Now let's establish the part which the battalion will play in the overall picture of a reinforced battalion in a delaying action. The reinforced battalion may be given the mission of sustaining a delaying action on a wide front from 3 to 16 miles*, which contains two or more avenues of hostile approach. The battalion will normally be organized with two reinforced companies abreast deployed in depth along the two most dangerous approaches into the battalion area of responsibility. The third rifle company will occupy a position in a central location, and be prepared to occupy blocking positions to the front, to secure defiles to the rear, or provide a flank security force. Reconnaissance is continuous and is maintained by the battalion and attached reconnaissance units.

Attachments to the battalion may consist of all or a portion of the following:

Two medium tank platoons.

One 4.2-inch mortar platoon.

One engineer platoon (organic to a division engineer battalion) or anti-tank mine platoon, headquarters and headquarters company.

Intelligence and reconnaissance platoon, headquarters and headquarters company, Infantry regiment.

Two transportation truck company platoons.

One battalion of field artillery.

One platoon of an antiaircraft artillery, automatic weapons battery, self-propelled.

One tactical air control party.

If more than one platoon of tanks is attached, the second platoon or platoons may be held as reserve or attached to one of the forward rifle companies. The attached antiaircraft automatic weapons platoon may be used in alternate delaying positions in a ground support role, to provide antiaircraft defense for the reserve, artillery, critical defiles on routes of withdrawal, or used as part of the reserve. Normally the 4.2-inch mortar platoon will support one of the delaying companies while the 81mm mortar platoon supports the other delaying company. The engineers or antitank and mine platoon should be utilized to prepare obstacles and demolitions on flanks, defiles, major bridges to be blown, and major communication centers, while pioneer and ammunition squads assist the rifle company personnel in preparing obstacles in front of or to the flanks of each delaying position.

Artillery is employed in depth in order to maintain continuous fire support for successive delaying positions during the withdrawal and at the same time to obtain long range fires to the front and flanks.

The tactical air control party is

* The Infantry School teaches that a battalion can be expected to delay on a frontage approximately twice that usually defended.

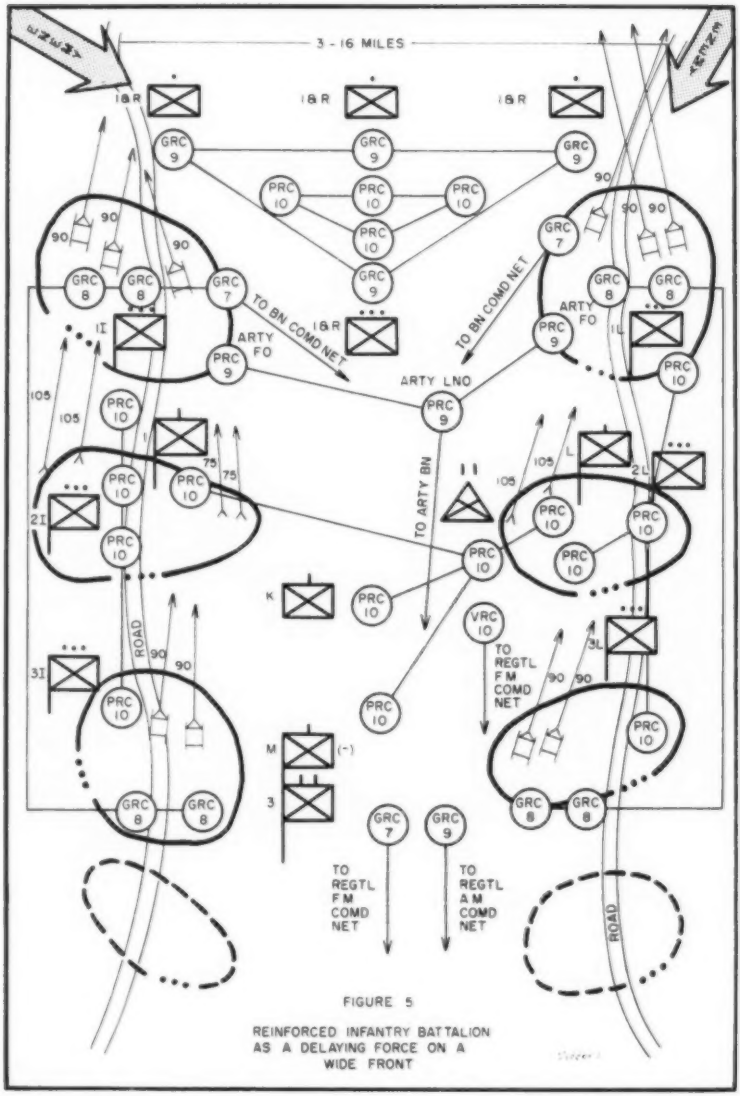

FIGURE 5

REINFORCED INFANTRY BATTALION AS A DELAYING FORCE ON A WIDE FRONT

desirable within the organization of a reinforced battalion, but when engaged in a delaying action, it may be likely that this party is not available due to enemy air superiority. However, with air support, delaying forces will be able to withstand an enemy attack by staying on their positions for a longer period of time.*

Flexibility within the battalion must be maintained at all times. The ability of all unit commanders within the battalion to change the tempo or direction of the withdrawal, counterattack, or to break contact with the enemy is essential. To maintain this desired degree of flexibility there must, of course, be an adequate communication system.

The battalion command post and medical aid station should be in a central location in the vicinity of the reserve company. Battalion trains should be well to the rear in order to avoid frequent displacements required of the Command Post and delaying forces.

These ideas are what we in the 26th Infantry developed, and are not offered as a pat solution. Some of you may agree and others will undoubtedly disagree with our concept. The important thing is that we start thinking more seriously about delay. Units should, I feel, become acquainted with the problem peculiar to delay just as we are familiar with the problems related to attack and defense. Problems of organization, employment, communication and logistics should be studied. Delay can be executed economically and effectively when commanders and troops know what they are doing. I do not mean to imply that "delaying action" is to be regarded as a major mission of the Infantry, but neither should we overlook the fact that "delay" today can spell success for tomorrow.

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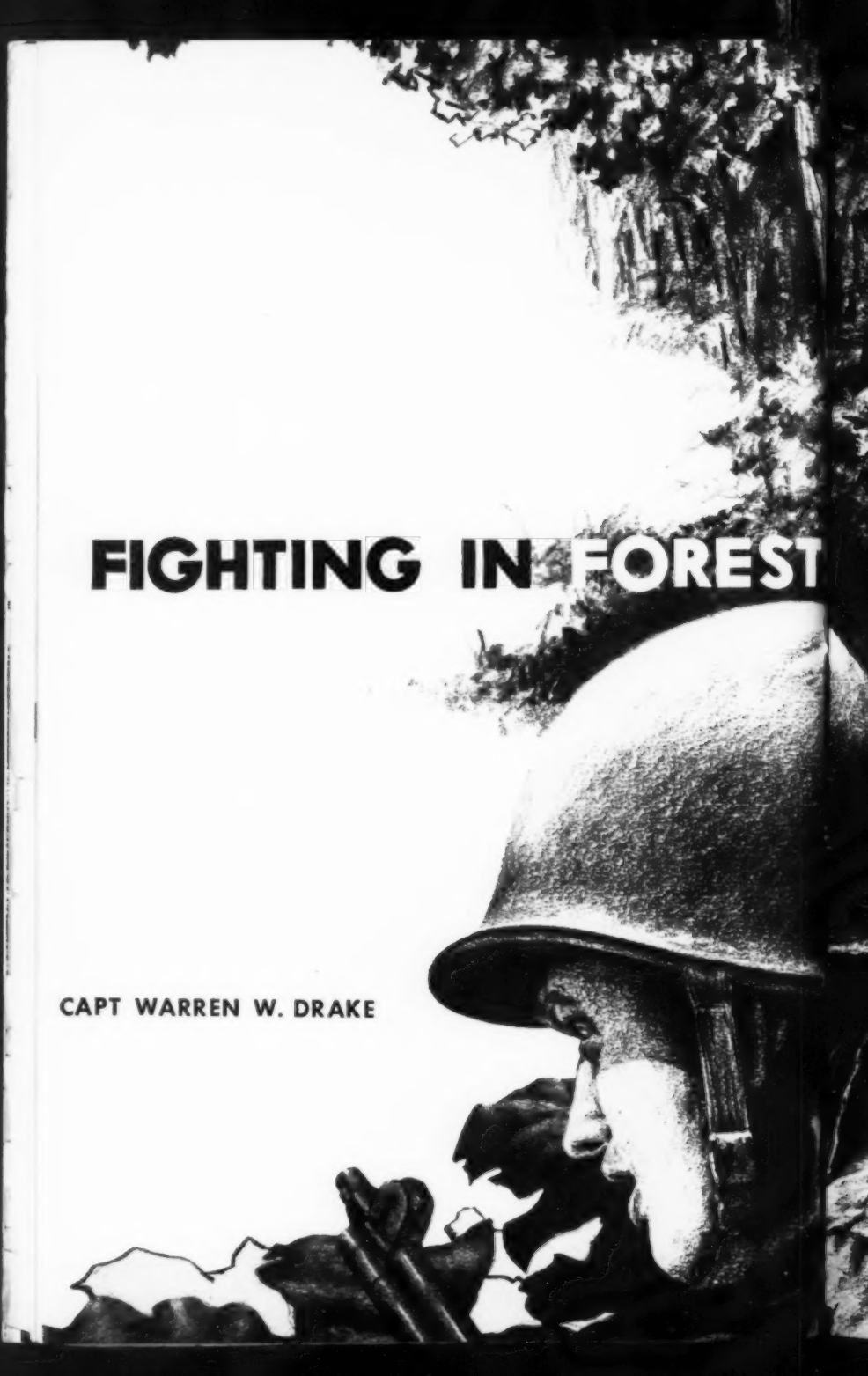
* The conduct of delaying action for a reinforced battalion follows the same pattern as mentioned for a reinforced company. Figure 5 illustrates a recommended diagram of a reinforced battalion with its normal attachments on an extended frontage, and is presently being used as one of the methods of organization of a reinforced battalion in the 26th Infantry Regiment.

Publication of this article is not necessarily to be interpreted as reflecting the thought of The Infantry School or THE INFANTRY SCHOOL QUARTERLY.

FIGHTING IN FOREST



CAPT WARREN W. DRAKE

FIGHTING in forests is as old as the history of warfare. In recent times American troops have experienced this type of combat in the Argonne of World War I and the Huertgen of World War II. These battles showed us vividly the special problems of forest fighting, and the great casualty-producing effect of tree bursts.

Nevertheless, our military manuals and troop training touch only briefly on this

✓ Special tactics are required for combat in wooded areas.

phase of combat. We need to know more about forest fighting. Our troop leaders should not be allowed to forget that the world's land surface contains huge wooded areas that could possibly become the battlefields of the future.

Before we can discuss Infantry tactics in forests, we must decide exactly what we mean by a forest. For the purposes of this discussion, it's a large area of ground densely covered with trees of firm standing. It is generally found in temperate climates. There is often undergrowth but this does not constitute a real obstacle to the Infantry as it often does in a jungle.

Conditions Are Changed

Conditions change when you enter a forest, and tactics must change with them. The principles outlined in Field Manual 100-5 will still apply, but we will have to modify our techniques to meet the new combat conditions.

Let's see in detail exactly how conditions in forests are different from those on normal terrain.

Observation. Normal observation ranges from 400 yards to 10 miles. In forests, visibility is greatly reduced and often 100 yards of observation can be considered the maximum. Maintaining control, coordination, contact and direction will be extremely difficult.

Aerial Observation. It will seldom be possible to detect a target from the air. We will not be able to count on close tactical air support.

Fields of Fire. While fields of fire usually vary between 100 and 800 yards on normal terrain, they will range from 25 to 300 yards in forests. Mutual support between Infantry units will be extremely difficult to attain.

Obstacles. A forest, in addition to possessing an average share of natural obstacles, is also capable of hindering and channelizing the movement of armor.

Avenues of Approach. The attacker will usually have a continuously concealed route through the forest. These routes for bringing up men and supplies will often become critical terrain. It is especially important that we possess all vital trails and roads.

Communication. The trees will greatly reduce the range of our radios. Except for short distances, wire will have to be used.

Artillery and Mortar Fire. The splintering of timber caused by tree bursts greatly increases the casualty producing effect of high explosives. Foxholes, under such circumstances, are of little value unless they have overhead cover.

Control, Coordination and Contact

In the case of an attack in a forest, the commander's chief difficulty will most likely be that of maintaining control, coordination and contact between his units. He can partly overcome this problem by keeping a minimum distance between units and individuals. If the

location of the enemy is unknown, he will do best to use a column formation. By using multiple columns he will have a faster method of finding the enemy's weakness than one column which hits the enemy and then spills around either flank in search of a weak point.

To prevent surprise attacks or ambushes, all around security should be used. This would consist of guards operating on all sides of the main body including the rear. Contact between units would be maintained by connecting files or patrols. Halts should be scheduled at pre-arranged points where units will take up a defensive position until adjacent units arrive. Wire should be laid concurrently with the advance. Within rifle companies and compact battalions areas organic radios can be used.

One difficulty in the attack will be the selection of an objective. There will often be a complete absence of easily identifiable landmarks or terrain features. The commander should select houses, clearings, firebrakes, roads or trails as objectives. Lacking any of these, he should choose an arbitrary time or distance phase line. Trails parallel to the direction of attack will often be a continuous objective as well as the axis of attack.

When an advance guard contacts the enemy it will immediately warn the main body and determine the enemy's location and whether he

is dug in. The advance guard will be equipped with small radios so they can contact the unit commander.

Should the advance guard be pinned down by enemy fire, the support will move up swiftly to determine the exact position and destroy it. If the enemy position is too strong to be knocked out by the advance guard, the unit commander must act at once. There will be no time for delay or consultation.

Conduct of the Attack

The unit already will be divided into two groups: The assault element and the fire support element. The latter, consisting of recoilless rifles, rocket launchers and automatic weapons, will move up fast and place a large amount of fire on the position. Meanwhile the assault element will move to the flank and neutralize the enemy strong point.

The action is a simple example of fire and maneuver. Speed is essential to take advantage of all the surprise that is possible in forest fighting. When the enemy position has been eliminated, our automatic weapons are immediately brought forward and the entire unit disposed to repel. Adjacent strong points should then be destroyed and enemy positions in depth penetrated.

Should the assault group also be stopped the next higher commander should employ the same principle of fire and maneuver, only on a larger scale. If it is found impossible to break through at the point selected, the attack must be expanded to feel along the line for a weak point or flank. If an enemy flank is located the commander can execute a flanking movement and roll up the enemy's positions.

When the enemy is on an extended front it will often be impossible to find his flanks. In this case constant pressure must be exerted all along the line. By bold action and by making full use of natural terrain and cover, an individual or group of individuals should make an effort to get up close enough to one of the enemy strong points to destroy it. Then the main body can continue the attack, penetrating that part of the line and rolling up the enemy from either shoulder of the penetration. That is the essential pattern for an attack in forests. The mass of the attacking forces speedily develops the successes of the assault units.

Decentralized Control

Decentralized control is especially emphasized in fighting in forests. Even the small unit commander must have control over all personnel and weapons operating in his vicinity. He must be able to use these units promptly in his fire support and assault elements. If possible, all supporting units, including tanks, should be attached.

A squad leader should be able to direct the actions of any tanks operating in his vicinity unless a higher unit commander is on the ground directing the action as a whole. Though the use of tanks by section or platoon for mutual support is, of course, desirable, this is not always possible in forests. Because of the limited visibility and the masking of a tank's fires by trees, mutual tank support as a

defense against enemy tanks will be difficult to obtain.

If necessary to guard against tank-Infantry teams, accompanying Infantry can protect the tanks by placing small arms fire around them. Tanks can be of great help to the Infantry commander when they are used to knock out enemy strong points or to spray the area with their machine guns and make the enemy keep their heads down.

By using a compact column formation, the commander can gain the maximum amount of control and concentration of the attacking force. When a strong point has been destroyed this force will be shifted rapidly to attack through the gap that has been created.

On the Defensive

Normal defensive tactics are modified only slightly for combat in forests. Extensive use should be made of patrols and outguards to give early warning of an attack and to disorganize, delay and deceive the enemy. The outguards also can be used to ambush the attackers' advanced elements as well as lay mine fields and construct obstacles in order to channel the enemy advance so that it can be destroyed by fire from our main battle position. These outposts will not only be placed laterally, but in depth as well.

Along with the usual considerations of mission, frontage, etc., the

density of trees and undergrowth will materially affect the position's location. Wherever possible the position will be organized either as a continuous line or as a series of mutually supporting half-squad strong points. Fire plans must be complete, detailed and coordinated between front line elements, security groups, adjacent units and the reserve. Fire lanes for automatic weapons must be cleared.

All positions should be dug in and completed with overhead cover. As in normal terrain, the reserve must be located near enough to block and eliminate any penetrations. Numerous paths, routes, assault positions and fire support positions should be planned, prepared and marked to permit rapid movement of reserve for the execution of counter attacks.

Withdrawal and Delaying Action

Let's see now how wooded terrain will affect the withdrawal and delaying action. The limited observation and natural concealment in a forest permit breaking of contact and the ready use of ambushes by the defender. Small units established in prepared positions on the ground and with snipers aloft in the trees can delay or destroy an attacking force several times their size.

Even if an ambush is not desirable, prepared positions can still be occupied until the attacker has deployed and has begun to press forward. Then the defenders can withdraw to other preselected positions and repeat the same tactics.

* * *

Successful Infantry tactics in forests are not basically different from tactics on conventional terrain. Owing to the very nature of a forest, we must emphasize certain phases of combat. Units and indiduals have to operate at reduced distances. The principles of fire and maneuver must be stressed in small unit tactics. Objectives must be short and limited; reconnaissance should be skilled and aggressive; speed and surprise are of primary importance.

In order that our forces be ready for any eventuality, including fighting in forests, our training programs should stress training of the individual soldier in scouting and patrolling in woods, use of the compass, tactical training of the individual soldier, and combat in woods for small units.

Although some of the major battles of both World Wars have taken place in forests, this subject has been strangely neglected in our military manuals, training, and operational planning. Fighting in forests has in the past taken a high toll of casualties, but it cannot always be avoided. To reduce the casualties and to insure ourselves of success in combat, wherever it may be, it is essential that we understand the special techniques and tactics that should be used in this type of fighting.

Publication of this article is not necessarily to be interpreted as reflecting the thought of the Infantry School or THE INFANTRY SCHOOL QUARTERLY.

Lt Morris P. Wolf

Test Your Military Knowledge

ANSWER the following questions and determine whether you are a bolo, recruit, marksman, sharpshooter or expert!

QUESTIONS: (10 points each)

1. Which of the following is qualified to see and use **Confidential Security Information?**
   a. Anyone cleared for Confidential.
   b. Anyone whose job requires it.
   c. Field grade officers and above.
   d. Anyone cleared for Confidential whose job requires it.
2. **Enfilade fire** is defined as fire:
   a. Which does not rise above the height of the average man while standing.
   b. In which the danger space coincides with the beaten zone.
   c. In which the long axis of the beaten zone coincides or nearly coincides with the long axis of the target.
3. Which one of the officers listed below is responsible for the security of the battalion command post?
   a. Battalion S2.
   b. CO, battalion headquarters company.
   c. Battalion executive officer.
   d. Battalion S3.
4. What is the difference between the **SOI** and the **SSI?**
5. The rifle, cal. .30, M1-C (sniper's rifle) is the standard rifle, cal. .30 M1 to which has been added which of the following:
   a. Flash hider, check rest and bayonet.
   b. Safety device, telescope and check rest.
   c. Flash hider, check rest and telescope.
   d. Silencer, telescope and check rest.
6. What is the difference between the commands **"Incline to the left"** and **"Guide left?"**
7. Which one of these men is most likely to use the **"Leader's Rule?"**
   a. Rifle platoon leader.
   b. 60mm mortar gunner.
   c. Regimental commander.
   d. Machine gun section leader.
8. What is the difference between **"maximum effective rate of fire"** and **"sustained rate of fire?"**
9. Which of the formations listed below provide the **best all-around security?**
   a. As skirmishes.
   b. Squad diamond.
   c. Squad column.
10. What is a **unit journal?**

Turn to page 110 and see how you rate. Look for another QUARTERLY Quiz in the next issue.

MAINTAINING A FIGHTING ARMY

MAJOR GENERAL JOHN M. LENTZ

Our Aim — Keep them Rolling and Ready

LAST YEAR an Infantry lieutenant sent home a series of letters to his father claiming that if a war began suddenly a good number of the weapons in his regiment would not shoot. The lieutenant's father forwarded some of these letters, with the name of the officer removed, to a senator in Washington, who sent them on to the Commanding General of the Division.

At first the report was not believed. The regiment was the finest in the Division. Command maintenance inspections had shown it to be in good shape. It had been averaging half its time in the field, enjoyed practically unlimited allowance of training ammunition, and participated in frequent firing exercises.

Nevertheless, the commander decided to be sure. Without warning, an inspection team descended on one battalion of the regiment and took it to a training area where all its weapons were counted and fired. There was, unfortunately, considerable truth in the lieutenant's claim. There was nothing of major seriousness, but too many of the weapons would not fire on the first try.

What's my point? It's simply this: The Infantry soldier is dependent upon weapons that fire and vehicles that roll. Our aim is a fighting army. The soldier is judged in the final analysis by his success in the field. In maintenance, as with every other military problem, all efforts and solutions must be directed toward insuring success in the field.

Experience shows that we can't be overly impressed with "paper work" maintenance. Command maintenance inspections are of tremendous value BUT they CANNOT REPLACE EVERYDAY CARE, continuous and complete checks or regular and frequent unit inspections. The one certain way to know if a weapon will fire is to fire it. The only positive way to know if a vehicle will roll is to drive it.

An effective Army must have effective maintenance. In my opinion there are no poor troops, no poor maintenance — only poor commanders. Good maintenance is a direct reflection of a commander's leadership capability and indicates that he is aware that good training and proper maintenance of equipment spell success in battle.

Command Maintenance Inspections. In one command in which I served we required a command maintenance inspection twice a year for all units. The purpose of these inspections was to help. The

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* Extracted and condensed from an opening address to the Preventive Maintenance Course at Aberdeen, Md.

inspection teams were large and included many Ordnance personnel. Members of the team would frequently remain behind after an inspection to help a unit correct deficiencies or when necessary to give needed instruction. Our units soon discovered that these provided a commander and his staff with much more real information and help about maintenance problems than could be obtained otherwise.

We soon discovered, however, that a deficiency standard was necessary. Something that would indicate deficiencies uniformly, regardless of what individual or team did the inspecting. One of the first steps taken was to rewrite the directives so that 70 percent of the total score (or grade) would be based on the actual condition of equipment. In actual practice the percentage used was approximately 85 percent.

As might have been anticipated, human nature disclosed a fault in our system. Units, informed in advance of an inspecting team's arrival naturally "prepared." The obvious corrective action was to dispense with prior notice.

Our Ordnance support accepted all vehicles for repair. If, however, a vehicle showed evidence of faulty 1st and 2d echelon maintenance, a command inspection team descended on the unit within 48 hours. This system worked very well, and few "special" inspections resulted.

Unit Care And Inspections. Inspections on a command level do much to insure proper maintenance, but they have little real value unless maintenance is handled effectively on the using-unit level.

In property matters, as well as in disciplinary and tactical or technical matters, it is necessary to stress the chain of command and command responsibility at all echelons. Some companies centralize the care of and responsibility for property. You have known such outfits — with their supply rooms well filled, and all arms under a single arms-room control. This may work in garrison, but units using this system are not able to take to the field easily, quickly, and without confusion.

The squad or section leader, NOT THE COMPANY SUPPLY SERGEANT, should possess and be responsible for all the property in his squad or section. He should maintain a list of his authorized equipment, and a list of the equipment with which he is charged. If it's necessary for security purposes that arms be kept in an arms rooms, then it should have squad or section racks or lockers. The motor sergeant, radio sergeant, and mess sergeant (and other specialist heads of activities) should be responsible for their equipment. They must all be provided with the means for safeguarding this equipment. In this way, shortages can be determined and corrected quickly, units can take the field without confusion, and equipment can be maintained precisely as it has been in garrison. Of almost equal importance is the property consciousness that develops.

Unit inspections should be carefully scheduled. There should be at least one weekly check of arms

The driver should check tire pressure daily before operation while the tires are cold. Failure to maintain the proper tire pressure results in abnormal tire wear.

The daily inspection of the air cleaner is important to the life of the engine. If necessary, the driver should replenish the oil to bead level. Oil change is mechanic's responsibility and should be done every 1,000 miles. Under dusty conditions, this should be done more frequently.

and a monthly equipment check. The latter can best be accomplished by the full field, showdown-type inspection of all equipment in the unit, including a detailed check of spare parts, accessories, and expendable supplies.

Theoretically this should insure uniformly well-equipped units. Unfortunately, we found that in practice this is not always the case. The reason is clear, but not easily correctible. Most units prepare their own lists of equipment. These lists are usually correct as far as major items are concerned, but there is considerable disparity between units when it comes to listing spare parts, accessories, and expendable supplies. As any company commander or supply sergeant knows, the preparation of a detailed property list is a tedious and difficult task since few units have all the supply catalogues. And yet, no unit can be properly maintained in the field unless it is well-equipped, and no unit can be well-equipped unless it knows PRECISELY and IN DETAIL what equipment it should have. I feel that in the interest of economy and efficiency, a common, simple equipment list designed solely for unit use should be devised and used by all the services.

Wheeled Vehicle Maintenance. Getting good 1st and 2nd echelon maintenance of wheeled vehicles is a serious but common problem. My experiences in this respect with a division artillery command have a general application. Although this outfit followed established procedures as well as any, its first command maintenance inspection disclosed an average of more than six deficiencies per vehicle.

Something was wrong. It became evident that the major problem lay with the driver, rather than with the 2nd echelon battery and battalion shops. If we could get effective weekly servicing, the problem would be solved. We had long check lists, but no two individuals could agree on what precisely should be included. A man was told to check the battery, but he was not told specifically how or what to check. Is filling with water ample? Should he take the specific gravity of the electrolyte? Should he remove the battery? Just what should he do?

We remedied this by providing a detailed check list. One that spelled out exactly what must be done. These instructions were complete in every way, and were determined from the maintenance manual of the specific vehicle. We were considerably perturbed to discover that with all necessary equipment at hand, it required at least six hours for drivers to perform the weekly maintenance check. We also discovered that an amazing quantity of equipment and supplies were needed for this check.

These rather disconcerting problems were not, however, without solution. We solved them by scheduling two-hour maintenance periods three afternoons a week. The artillery battery for example was divided into three groups, each using one set of equipment on each afternoon. The work was done under the supervision of officers and non-commissioned officers, who checked each phase of the operation.

Cylinder compression is checked by a mechanic during the semi-annual, or 6,000-mile, preventive maintenance service.

We made an interesting discovery when we found that it was a mistake to put motor personnel in charge of drivers during motor maintenance periods. These "motor men" are specialists, not supervisors. The "motor men" had two main jobs: laying out the maintenance equipment for the use of the battery, and to help and advise during the maintenance periods. They also prepared lists of all the equipment needed for servicing the battery, but they are no longer driver supervisors.

This system, we found, did not work well in the field. For one thing, the vehicles could not be brought together for their scheduled maintenance periods. In the field it was not possible to have sufficient supervision. Neither the small-unit commanders nor the motor personnel could supervise or give advice when the vehicles were spread over a large area. The drivers could not adequately perform the maintenance on their own.

If a system fails in the field, it is of little value to a combat unit. We faced the fact that the theories behind our maintenance methods were faulty. Vehicles cannot be properly serviced by their drivers. One reason is that there is a big turnover of drivers; and they do not stay in the job long enough to become good motor mechanics, which is practically what is required for a thorough weekly servicing. One third of our drivers had another primary MOS. Few of these could spare six hours a week from their primary jobs to work

on their vehicles. Too many vehicles were just not receiving a weekly check. For another thing, the caliber of personnel assigned to driving was low. Most of the men with high AGCT scores had been made specialists, leaving the low scorers to be drivers. There is no advancement for a driver, and the good men, with an eye toward their future, got into something else as soon as possible.

Experience showed that we were relying too heavily on the drivers for maintenance. Drivers are not trained in the sense that a motor mechanic is trained. Any work that they do must be outlined in detailed instructions. Check lists may be of value as reminders to trained men, but they are no help in showing exactly what practical operations are to be performed.

The need for a change in our present system of maintenance has been recognized. The Office of the Chief of Army Field Forces has already submitted to the Department of the Army a revision of TM 9-2810, covering this subject.

Under the proposed change, our maintenance would closely parallel the relationship between a civilian automobile owner and his service garage. The driver would be responsible only for daily operations. To make up for the driver's weekly maintenance check, unit maintenance personnel would service the vehicles every two weeks. This procedure also follows that of commercial truck fleets, where little responsibility is placed on the driver.

In civilian life, the garage is stationary, and we take our cars to the garage for servicing. In the Artillery we would do better to take a mobile garage to the vehicle when in the field. This would apply to the monthly or semi-monthly servicing for the Artillery battery but not the six-month battalion servicing.

It is possible that this system will necessitate some increase in maintenance personnel. If so, this can be made up by a reduction in the number of full-time assigned drivers. In the Artillery, only ammunition and supply vehicles would need them. There would be no change in the daily and weekly maintenance operation of crew-served track vehicles. Tank crews, for example, have the tools and training to service their tanks. The proposed new TM 9-2810 is a realistic approach to the driver maintenance problem.

Property System. We cannot have good maintenance, nor is there any point in having it, unless we are able to hold on to the equipment itself. Our present property book system of property responsibility needs to be re-examined. It is run today like a self-service bank, whose only function is to pay out money when a check is presented.

Under the old prewar property system, the regimental or battalion commander made out all requisitions, drew all property, and issued equipment to company commanders on memorandum receipts. He kept a record of his debits and credits on stock record cards which were audited annually. It was a simple, workable system, and the interests of the government were well-protected. After World War II this system was discontinued be-

cause of the terrific workload of auditing the stock record accounts.

Under the new system, the company commander prepares the requisitions. Although these requisitions are checked by the regimental supply officer, he has no simple administrative record set-up, such as stock record cards, with which he can make his check. He still requisitions, draws, and issues all property to the companies, with Shipping Tickets instead of Memorandum Receipts. After Shipping Tickets have been signed by the company commander, they are filed by the regimental supply officer with his original requisition. He can go through each one of these files to check the company property books, but this is impractical and time-consuming. In effect, there is no simple and sure way to check the accuracy of the company property books.

Just as many people would serve themselves accurately and honestly from a self-service bank, so do many units handle the company property book system accurately. But others do not. For example, over a period of nine months one division received a large number of surveys of winter clothing. They varied in cost of clothing surveyed, from small sums to over $20,000.00. Faulty entries or non-entries in property books were involved in almost all of them. Some of these surveys were returned to their units for further action many times, but nobody besides the government was ever stuck. These great losses would have been impossible under our prewar system of property accountability and issue. And if the losses could have occurred, the government would have been largely reimbursed.

Experienced instructors at The Infantry School have recognized this problem, and are teaching a cure for it. They advise regimental supply officers to keep duplicate company property books. With these, they can readily verify the accuracy of these books. But there is still no check on the regimental supply officer and his people, through whom pass an immense amount of costly equipment.

Another problem of today's system is that it places a great burden of paperwork on the companies. The preparations of requisitions is a difficult and highly technical job, requiring not only trained personnel but numerous volumes of Ordnance standard nomenclature lists and the supply catalogues of the other services. Few companies are equipped to prepare requisitions properly.

The Infantry School has also recognized this problem. They advise the keeping of one set of SNL's and supply catalogues by the regimental supply officer, and none in the companies. In preparing requisitions, the companies would be assisted by the regimental supply office. This would be a fine blow for supply economy. The saving of 20 sets of the monumental supply library volumes in each regiment is no small item.

Under the old system, when a company commander took over a company, he received a list of balances and took over that property. That was all there was to it. If anything was missing, the company commander had to find it or he was stuck. The company supply ser-

geant couldn't juggle the list of balances, as he can now the property book; the regimental supply sergeant couldn't juggle the stock record cards, because they were audited annually. The regimental supply officer had an easier job than he has today, because the stock record cards provided a simple check on the companies.

It is time to judge again whether the cost of the change was worth the benefits of doing away with the auditing. Even with audit, the old system was more workable in every way than the new, as The Infantry School is now in effect teaching. It is vitally important to every company commander to keep a careful and calculating eye on his property books, and to adopt some system that will provide an effective check on them.

In all matters of maintenance and property control, any solution evolved must be aimed at success in the field. Do not permit yourself to become entranced with our pleasant garrison facilities. You will need great honesty of purpose and considerable initiative because we have .drifted into many policies that are based on garrison operations and on an overwhelming tendency to be impressed with paperwork. First and foremost, we are still developing a combat field army. That is your ultimate aim.

Publication of this article should not necessarily be interpreted as reflecting the thought of the Infantry School or THE INFANTRY SCHOOL QUARTERLY.

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THE INFANTRY SCHOOL QUARTERLY
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Trick of The Trade

Lt Col Reginald C. Frizzelle

IT ALL STARTED when the 137th Infantry (35th Division) went on the Louisiana maneuvers back in 1941. Folks were telling us we'd learn a lot and we did — a lot in the way of applied tactics and a great number of trade tricks that have stood up over the years.

As a comparatively green company commander in those days, I found that one of my big problems was our kitchen. It seemed that on every move we were breaking the folding tables that were used as combination serving-chopping tables. And no matter how well we thought our supplies were packed they were always spilling or getting banged up. It wasn't good. There was, we discovered, no system for packing our kitchen trailer.

Well, to make a long story short, we soon found that our kitchens were in dire need of streamlining. Once we arrived at this conclusion we immediately went to work building a portable pantry, complete with shelves, and sturdy, ready-to-use, well-surfaced tables that fitted snugly into the kitchen trailer.

Our efforts were successful and proved the answer to our problem. Our kitchen could go "into and out of action" quickly. The mess sergeant knew where everything was, and the cooks were in better temper. Later, in 1943, the portable pantry was adopted as standard throughout the regiment and was successfully field-tested during our World War II operations in Europe.

A few years later (1949) the 38th Infantry (2d Division) adopted the portable pantry as standard equipment throughout the regiment, and again it was found as satisfactory as it had been in the 137th. We

field-tested in the States and later used it to advantage in Korea.

History repeated itself, for it was again found that in addition to providing uniform kitchens within the regiment, the portable pantry reduced far less loss and breakage of equipment. Kitchens could be set up with greater speed and could "break camp" quicker. There was no need for makeshift tables or "expedient" chopping surfaces — the cooks had what they needed and used them. Even in combat, food could be prepared on a surface that would have made even a food service adviser happy.

About this time someone is probably asking, "How about a blueprint?" A true blueprint wouldn't be of much assistance since our kitchen trailers are built by different manufacturers and consequently have slightly different dimensions. For this reason each pantry must be tailored to fit its trailer. We have, however, indicated in the accompanying pictures the dimensions of one portable pantry. The figures shown will pro-

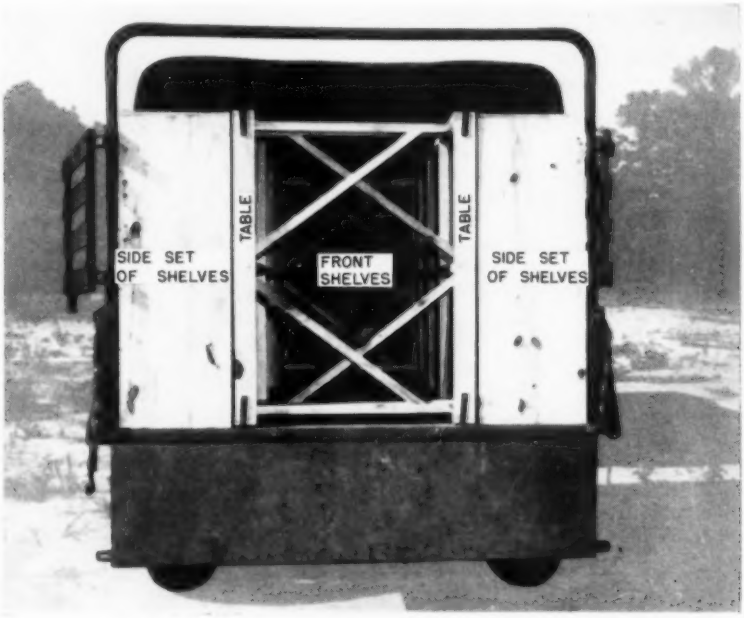


Figure 1.
Portable pantry has shelves and sturdy, ready-to-use, well-surfaced tables that fit snugly into the kitchen trailer.

Figure 2.

Inside view of trailer, showing placement of shelves.

vide you with only an approximate figure — since your kitchen trailer will more than likely differ in size, however slightly, from the one we used. Remember that the tables must fit snugly to lock in the items stored on the shelves and at the same time avoid any end play when the tail gate is closed.

And now let's consider a few of the questions usually asked about the portable pantry. Here's one that comes up often: "Does the pantry limit the trailer's usefulness as a carrier?" The answer is no. Remember that no part of the pantry is attached to the trailer. It can be quickly and easily removed.

Another question is, "What happens to our issue kitchen equipment?" The stoves, of course, go into the kitchen truck. The immersion heaters, tent fly, poles, pins, water cans and food containers are placed in the center of the trailer between the legs of the table.

A frequent query is, "The tables are rather wide. Why?" They are wide, but for two good reasons. (1) They must have adequate width to hold rations, etc., on the shelves in transit and (2) when used as serving tables this extra width allows mess personnel to place the food containers so that any food spilled goes on the table top (and not the ground) where it can easily be cleaned off. This feature naturally reduces the fly hazard and keeps the out-of-door mess sanitary.

While we are on the subject of the tables, note that in Figure 4 the lower insert clearly shows the manner in which the legs are constructed. One table has its legs set in four inches from the corners to permit the legs of the other table (with legs flush at the corners) to mesh securely and bind the two when they are placed in the trailer.

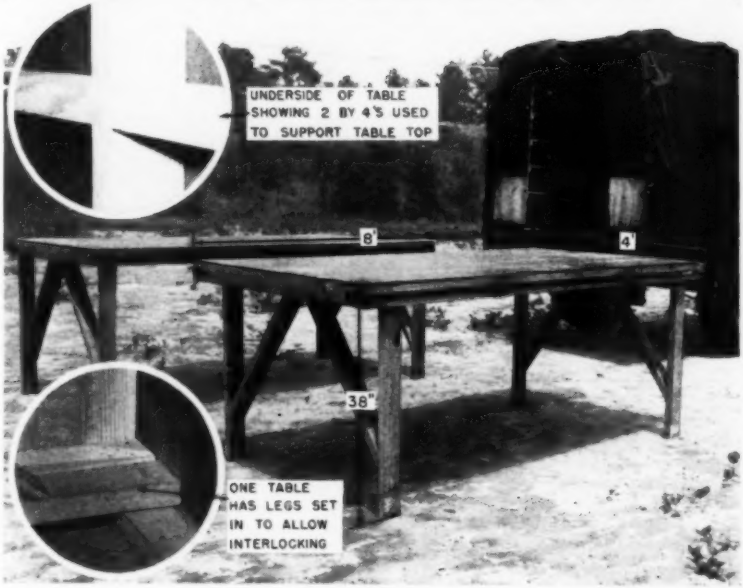
Let's consider still another question. "What is placed on the shelves?" Frankly, this is a matter to be determined by your mess sergeant. It's his bailiwick, and he should be left to his own judgment on the matter. Experience indicates, however, that the forward shelf should be used to store one day's reserve (C-rations in boxes). This shelf is suggested for a good reason. Any supplies placed on it can be reached by merely opening the dutch-type doors on the forward half of the trailer and pushing aside the tarp. If emergency or reserve supplies are stored on either of the other shelves, the tables must be removed before you can get to them. It's suggested that the two side shelves be used for your staples.

Still another and the most frequently asked question is, "How much does it cost to construct a portable pantry?" At unit level,

Figure 3. In the center of the trailer (upper right) can be placed heaters; tent poles, flies and pins; water can; and food containers.

Figure 4. Dimensions of tables are shown in lower photograph. In the upper insert is shown the construction used to support the table tops. The leg construction, to permit meshing of tables, is shown in lower insert.

IMMERSION HEATERS, WATER CANS, FOOD CONTAINERS, ECT, MAY BE STORED HERE


UNDERSIDE OF TABLE SHOWING 2 BY 4'S USED TO SUPPORT TABLE TOP
8'
4'
38"
ONE TABLE HAS LEGS SET IN TO ALLOW INTERLOCKING

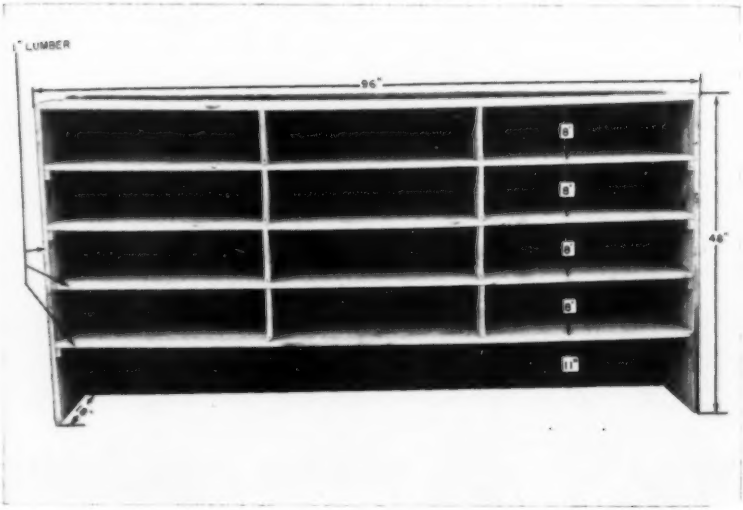


Figure 5.
Dimensions of one of the two side shelves.

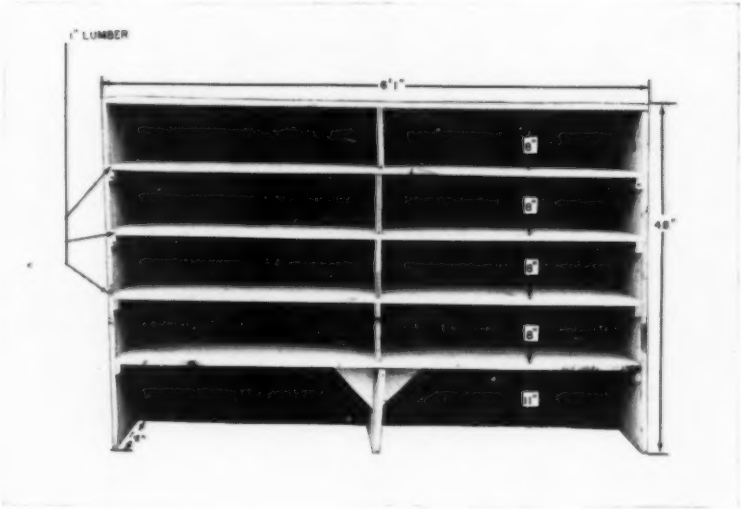


Figure 6.
Dimensions of the front shelf.

using "home" labor, it is quite inexpensive. The only real "cost item" is the masonite table top. While everything else can be constructed of scrap the medics rightly insist that no surface be used that will absorb spilled food and liquids.

To get down to brass tacks in the cost-conscious era, here are the financial facts based on the cost of the demonstration model constructed at The Infantry School. When examining these figures don't forget you can use scrap and bring the cost down to practically zero.

Material	Purpose	Price
324 Bd Feet 2 x 4	Legs, bracing, frame and table	$ 9.18
120 Bd Feet 1 x 12	Shelving	11.52
80 Bd Feet 1 x 8	Shelving	7.68
20 Bd Feet 1 x 6	Shelving	1.92
2 sheets, ¼" masonite 4 x 8	For two table tops	10.50
35 Ft 1" x ⅛" strap iron	To protect edges of tables	9.50
1 gross 1½" #8 flat headed screws	To secure strap iron to edges of tables	.24
	TOTAL	$50.84

There are the facts. As you can see, the portable pantry is no "nice to have" gimmick. It is functional mess furniture that has been field tested. In the opinion of the units that have used it, the portable pantry is "solid." Once you try it, I believe you will agree.

★★★

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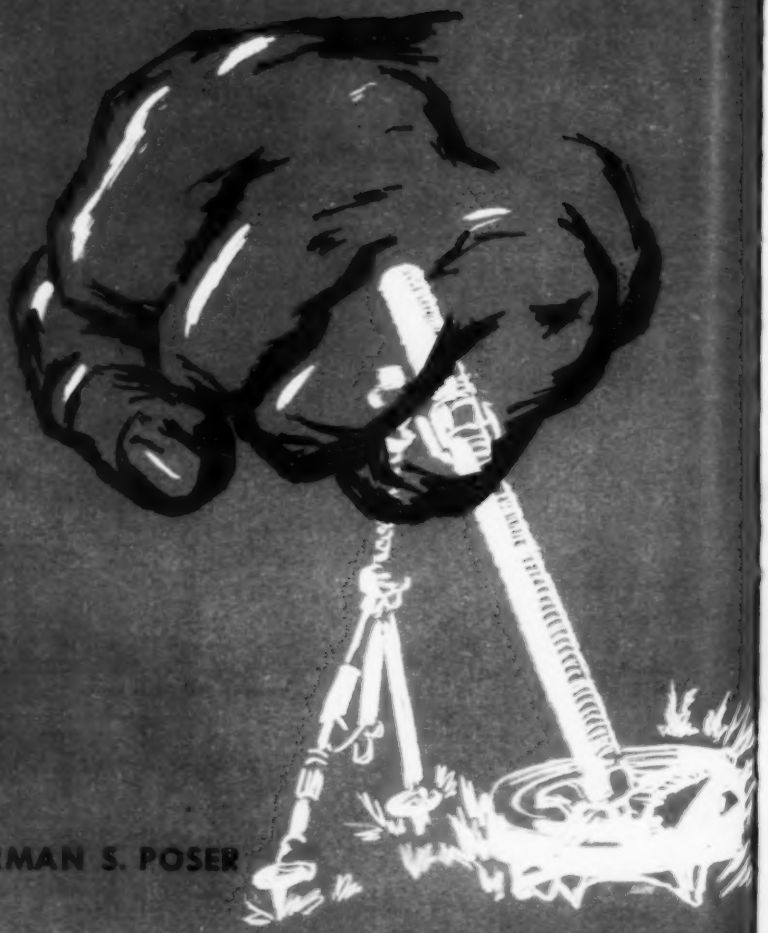


CPL NORMAN S. POSER

the sunday punch

The Infantry's Mortars Have a Distinguished Past

IN EARLY 1776 a small American privateer captured the British supply ship *Nancy* and with it a large quantity of munitions. Soon the spoils arrived at the Continental Army's camp in Cambridge, Massachusetts. There were 2,000 muskets, 30,000 round shot, 100,000 flints, and as the crowning glory a shiny 13-inch brass mortar. After the valuable weapon had been christened with a bottle of rum, it was loaded and fired. There was a shattering roar. The mortar had blown up.

The spectators may have been dismayed, but it is not likely that they were very surprised. A mortar blowing up was a common event during the wars of these times. Although this weapon can trace its ancestry back to the Middle Ages, it did not become safe and efficient until World War I. The story of the mortar, from the medieval bombards* to the Infantry's new 81mm model and the sturdy 4.2-inch, parallels the development of fire arms from their very beginnings to the lethal weapons of today.

In the fourteenth century as in the present, the basic purpose of the mortar was to neutralize, with high-angle fire, positions hidden from direct fire weapons. Yet the mortar has acquired new uses and new characteristics. Today it is an Infantry weapon. In the defense the mortar gives close-in protection. In the attack it is used to fix the enemy and destroy his hidden positions. The twentieth-century mortar is light enough to move with the Infantry and accurate enough to hit point as well as area tragets. Its quick, simple method of loading gives it more fire power than artillery of comparable caliber.

Today's mortar resembles its medieval ancestors no more than the sand-lizard resembles the dinosaur. And like the dinosaur, the early mortar became extinct because of its unparallelled size and inefficiency. When the Turks besieged Constantinople in 1453, they brought up 14 batteries of these monsters. Each weapon needed 60 oxen to drag it, 200 men to keep it in position, and 200 more men

* The earliest siege mortars were known as bombards. The word is derived from the Italian "bombo et ardore" meaning "thunder and lightning." The word "mortar" came into use during the fifteenth century. It was originally used to describe the shape of the weapon, which was similar to the cup, or mortar, in which alchemists and apothecaries mixed drugs.

to level the road ahead of the mortar. It fired a stone shot 30 inches in diameter that weighed between 1200 and 1800 pounds.

While these weapons were useful for lobbing boulders over the walls of defended cities, their great weight reduced their effectiveness. Consequently they were used only in sieges. Early European mortar gunners were not soldiers but members of a specialized trade who hired their guns and their services out for a fee. They were regarded with suspicion by soldiers and civilians alike, who believed these makers of fire and destruction to be in league with the devil.

The medieval mortarman led a dangerous life. His weapon was always likely to misfire or, on the other hand, blow itself to bits. The first ammunition was made either of stone or cast iron, but in the fourteenth century the Venetians developed an explosive shell. Now the gunner had to light the fuze of the shell as well as that of the propellant charge. Fuzes made of fabric soaked in a mixture of strong wine and gunpowder were likely to be unpredictable, and mortar gunnery remained an exciting occupation until well into the sixteenth century, when the single-ignition shell came into use. With this method, the explosion of the propellant charge lit the fuze of the shell. Now the gunner had to ignite only one fuze.

From its very beginnings, the mortar developed faster than flat-trajectory cannon. Needing a range of only a few hundred yards for the purpose of firing over city walls, mortars required less gunpowder than the cannons of the same period. In addition, the early gunsmiths, with their primitive methods of metallurgy, found it much easier and cheaper to cast the short barrels of mortars than long cannon barrels.

It would require several volumes to describe every type of mortar designed before the twentieth century. Despite the weapon's almost incredible simplicity, there have been countless variations. Since the Middle Ages the armies of every so-called civilized nation have used mortars. Some were made of brass, some of cast-iron; some fired 3,000-pound rocks, others, missiles scarcely larger than a musket ball. Most mortars had short, wide sloping barrels, with a narrow chamber at the base for the propellant charge. But the first mortar, which made its appearance shortly after the introduction of gunpowder to the European scene, was shaped like a bottle and shot arrows into the air.

To Charles VIII, king of France at the time that Columbus discovered America, must go the credit for putting mortars (and artillery) on wheels. When he invaded Italy in 1494, he took with him a number of ox-drawn gun carriages. The invasion was not altogether successful, but the mortar had now gained a small degree of mobility. King Charles was also the first man to classify mortars separately from cannon. He listed them by weight and type of projectile.

Another well known king, Henry VIII of England, is said to have used 50 mortars at the siege of Boulogne in 1544. A contemporary report of this battle shows that these mortars

Two characteristic early mortars. Top: Fifteenth-century French iron mortar. Diameter of bore is six inches. Note the holes used for adjusting elevation. Bottom: 12-pounder bronze coehorn mortar. This weapon was surrendered to American forces by the English under General Burgoyne at Saratoga in October 1777.

fired a primitive type of explosive shell: "They made hollow shot of cast iron to be stuffed with fireworks or wild-fire, whereof the bigger sort had screws of iron to receive a match to carry fire kindled that the firework might set fire to break in pieces the hollow shot, whereof the smallest piece hitting any man would kill or spoil him."

Until the nineteenth century many mortars had a fixed elevation of 45 degrees. Range was adjusted by varying the amount of powder, a method that made gunnery little more than guesswork. The mortar was mounted on a stationary wooden platform. When the weapon and platform had to be moved, they were placed on a cart. By the time of the Revolutionary War refinements in mortar gunnery were beginning to appear, one of the chief ones being that a wedge, known as a quoin, was placed under the barrel for adjusting elevation.

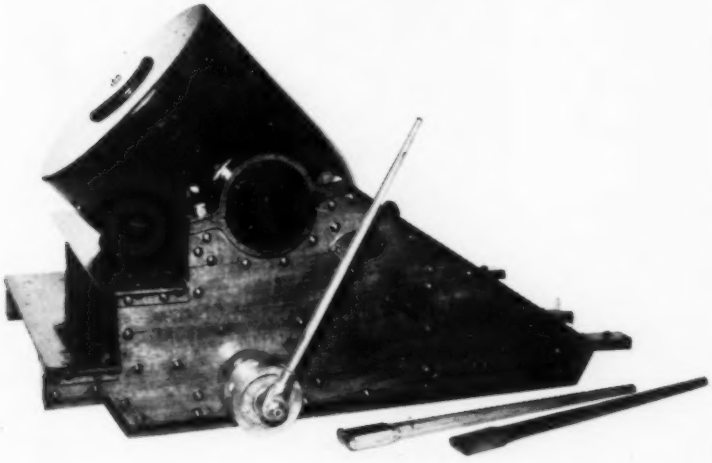
The mortars of the eighteenth and nineteenth centuries were, like other artillery pieces, usually adorned with a plethora of shields, scrolls, names and other decorations. They had two handles, or dolphins, used for lifting them on and off their mounting platforms. One of the most popular mortars of those times was the Coehorn, named after its Dutch inventor, Baron van Menno Coehoorn. This small bronze mortar was used in America as early as 1740, during the siege of St. Augustine, Florida. Coehorns played a part in the U. S. Civil War, and many of them may still be seen in our parks today.

The sieges of the Civil War brought back giant mortars reminiscent of the weapons the Turks had used at Constantinople 400 years before. There were, however, a few improvements. For one thing, the Union Army mortars were the first to have an elevating screw for precision adjustment. They were fired from a platform made of wrought iron, with rollers so that the mortar could be moved without being lifted onto a wagon.

During the Civil War mortars were mounted on the decks of small ships and used to bombard the Confederate coastline. In 1862, when Admiral David Farragut attacked New Orleans, he brought a flotilla of 20 mortar boats with him up the Mississippi. For six days the 13-inch mortars softened up the forts protecting New Orleans. And even during Farragut's famous up-river attack that followed, the huge weapons continued to rain shells on the defenders.

Large mortars also figured prominently in the siege of Petersburg, Virginia, in 1864. One Union battery, known as the "Petersburg Express," dropped a 15-inch shell into the city every half hour. "The Dictator," a famous 13-inch mortar, was used in this siege. It could fire a 200-pound shell at ranges up to a mile, but was highly inaccurate at its maximum range.

Visiting VIP's were greatly impressed by seeing the crews of these siege mortars in action. The diplomat, Charles Francis Adams, wrote to his brother, "Here you see no fuss and feathers, no empty show; all is hard work by working men. In point of appearance and bearing the soldiers . . . are fair specimens of men in the work of the field . . .



Giant mortars of the Civil War period. Top: 16-inch bronze mortar, made in Massachusetts. It was designed to fire a large quantity of stones, giving much the same effect as a fragmentation shell. Bottom: 13-inch siege mortar. Weighing 17,120 pounds, this weapon could hurl a 200-pound shell two miles using an elevation of 45 degrees.

rough, wiry, intelligent looking men."

The largest mortar used in the Civil War was the Mallet sectional mortar. This weapon, which weighed 50 tons, had a bore 8 feet long and 36 inches in diameter. It fired a 2,400-pound spherical shell that contained 480 pounds of explosives. The projectile had to be lifted into the muzzle by means of a block and tackle, while the powder was put into a priming pan at the breech. As a result, it could not be fired very rapidly.

After the Civil War the conduct of war changed rapidly. The development of the machine gun and accurate rifles and artillery switched the emphasis from attack to defense. The result was the long-drawn-out trench fighting of World War I. Though few realized it in the early days of the twentieth century, the mortar was about to play a new and important role — a role made possible by the development of high explosives and new methods of making steel during the late 1800's.

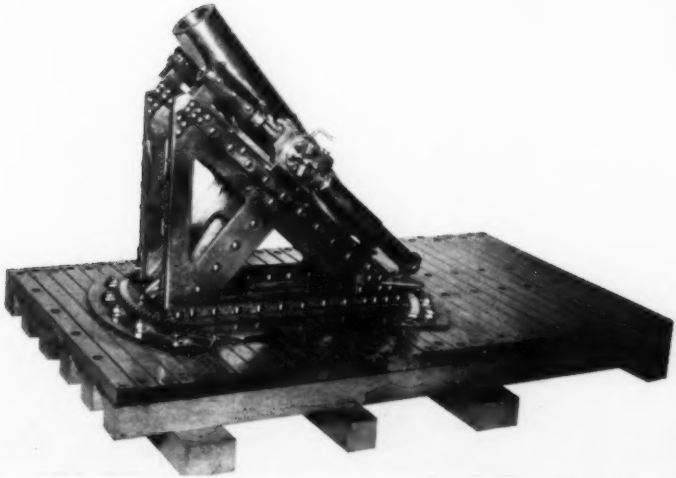
In 1914, the Germans had about 150 mortars of all sizes, known as "minenwerfers," while the Allies had only a small number of mortars. Early in the war the Germans used the minenwerfers to bombard the British and French trenches. Their purpose was merely to destroy the morale of the Allied troops, but they found that these high-angle-fire weapons were ideally suited for destroying trenches and fortifications. The old siege weapon was about to come into its own.

The Allies quickly began searching for an effective mortar. Museums were ransacked for the designs of ancient siege mortars, and the two countries' best military inventors set to work to develop the needed weapon. Meanwhile, the men in the trenches made homemade mortars. Taking an empty shell case, they would fill it with powder and nails and fire the device in the general direction of the enemy. These hastily improvised high-angle-fire weapons were extremely dangerous to the men firing them.

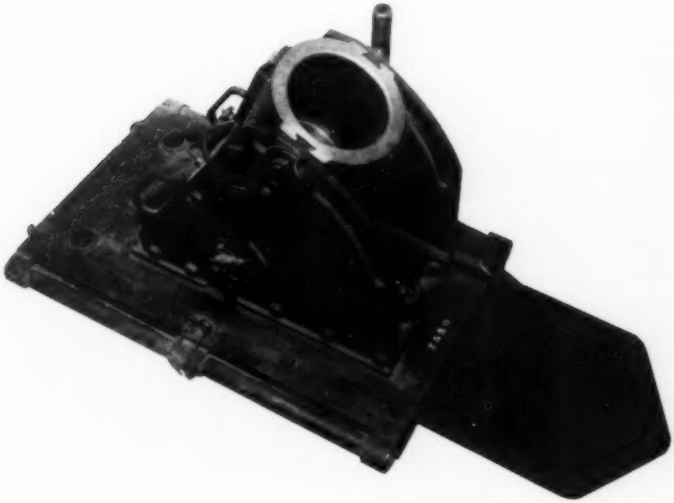
The British and French military commanders and Ordnance experts soon realized that the mortar required for trench warfare would have to have some entirely new characteristics. The old siege mortars were almost useless in the trenches. To be effective, a mortar would have to be light, highly mobile, simple, accurate and capable of rapid fire.

During the early days of the war many different mortars were developed and used in the trenches. At Verdun, where one of the greatest German attacks of the war was beaten back, the French used a squat little mortar which, from its size and shape, was known as the Toad. Fired from a trench, the Toad threw a small bomb neatly over the parapet and into the enemy trenches. But this crude mortar was too unsafe and inaccurate. The older mortars were too heavy and slow-firing. Then in 1915 came the Stokes mortar.

Sir Frederick Stokes, father of the modern mortar, had been a prominent British engineer and inventor before the war. He had won renown by inventing machinery for operating sluice gates, making ce-



Two Pre-World War I mortars. Top: 7-inch breech-loading rifled steel mortar, Model 1892, designed for sieges and for destroying strongly entrenched positions with high-angle fire. Used to supplement howitzer fire, it fired a shell weighing 125 pounds. Bottom: 142mm Belgian trench mortar, manufactured in 1908.



ment, and refrigerating food; but he had little knowledge of military weapons or explosives. Nevertheless, when the war began he had volunteered to serve on the invention committee of the Ministry of Munitions. It was there that this civilian engineer, ignoring the risk stemming from his comparative ignorance of the nature of explosives, perfected the Stokes mortar and its ammunition.

The three mortars used by the U. S. Infantry today are all adaptations of the Stokes. It was one of those revoluntionary weapons which, by its effectiveness and simplicity of operation, made all previous weapons of its class obsolete and demanded new tactics for its use. The 3-inch Stokes Trench Mortar weighed 112 pounds and consisted of three main parts, the base plate, barrel and elevating stand. It bore a strong resemblance to today's 81mm mortar. Its projectile was the first mortar ammunition ever to have a self-contained propellant charge. Thus the shell could be fired by merely dropping it down the barrel and allowing the fixed firing pin to detonate the primer.

The Stokes mortar was designed specifically for trench warfare, but military authorities did not take long to realize that high-angle fire would be useful to the Infantry in other types of combat. As a consequence, the U. S. Army, which had used the Stokes during the War, soon began developing its own mortars, which would eliminate some of the major defects of the Stokes. The latter's range was only 800 yards; having no sight, it depended on a rather crude method of aiming.

These shortcomings were eliminated in the new mortars. The 60mm, 81mm and 4.2-inch weapons, familiar to the Infantrymen who served in World War II and Korea, have accurate sights and great enough ranges to perform their missions of close and continuous support for the company, battalion and regiment, respectively. The 60mm mortar is the company commander's own artillery. When used with the Base Plate M1 it can be fired as a hand-held weapon at ranges up to 750 yards.

The Army has recently developed a new model of the 81 (M-29), with a circular base plate. The principal improvements are reduced weight and 360 degree traverse. (For more on the new 81mm mortar, see the Infantry School Quarterly, January 1953.)

The 4.2-inch mortar is one of the Infantry regiments most potent sources of fire power. Originally a weapon of the Chemical Corps, it has recently been turned over to the Infantry. Known affectionately to World War II Infantrymen as the "goon gun" it can throw out an enormous amount of fire. The 12 mortars of the regimental heavy mortar company can lay down a greater amount of high explosives, by weight, in a short time than can a battalion of 105mm howitzers. A new 4.2-inch mortar, replacing the one used so successfully during World War II, has seen action in Korea. This Babe Ruth of high-angle-fire weapons, the M30, weighs 650 pounds and has a maximum range of more than 6,000 yards.

The Infantry's mortars are well suited to modern warfare. In a re-

port on the weapons used in Korea during the winter of 1950-51, Brig Gen S. L. A. Marshall stated that "the general performance by the family of mortars has been excellent. Under the conditions imposed by the Korean terrain, each type — the 60mm, the 81mm and the 4.2-inch — has its particular role in the development of a balanced program of supporting fires."

Nevertheless, today's mortars can be improved upon. It was found in Korea that if a mortar was fired for long in temperatures of below 10 degrees below zero, the firing pin and base plate would often become disabled. It is possible that the Army will develop a mortar that can operate more efficiently in extremely cold weather.

The general trend of mortar development has been toward a small mobile weapon that can move with the Infantry, yet there have been startling reverses to this trend. During the latter days of World War II, the Army built a 36-inch (914mm) mortar for destroying unusually strong German fortifications. This giant, known as "Little David," weighed over 86 tons and fired a projectile of 3,600 pounds. Although the war ended before Little David could be used, this overgrown 60mm mortar demonstrates vividly the possibilities of this deadly but simple weapon.

From the ancient walled city of Constantinople to the hills of Korea, the mortar has helped write history. A cumbersome antique only 40 years ago, the mortar is today the Infantry's Sunday Punch.

The QUARTERLY expresses its appreciation to the Museum of the United States Military Academy and to the Museum's curator, Mr. Gerald C. Stowe, for providing the photographs of historic mortars used with this article.

Answers . . . to the Quiz

For complete detailed discussion check the references listed with each of the brief answers given below.

Possible score	100 points
Expert	90-100
Sharpshooter	70-89
Marksman	50-69
Recruit	30-49
Bolo	0-29

1. d. Anyone cleared for **Confidential** whose job requires it. (AR 380-5, par 17).

2. c. **Enfilade** fire is defined as fire in which the long axis of the beaten zone coincides or nearly coincides with the long axis of the target. (FM 23-5, U. S. Rifle cal. .30, M1, par 222).

3. b. CO, battalion headquarters company. (FM 7-20, par 54)

4. **SOI, or Signal Operating Instructions,** are the means through which technical control of signal agencies is maintained. SOI contain technical instructions necessary for effective operation of the communications system.

SSI, or Standard Signal Instructions, supplement the SOI. While the SOI contains information subject to frequent change, SSI contain information that is relatively unchanging. (FM 24-5, par 322 and 325).

5. c. The rifle, cal. .30 M1-C (sniper's rifle) is the standard rifle cal. .30 M1 to which has been added a flash hider, check rest and telescope. (FM 21-75, par 102-118).

6. The command **"Incline to the left"** is given when necessary to execute a slight change in direction. The guiding element moves in the desired direction and the rest of the unit follows.

The command **"Guide left"** is given when a unit is in column. On the command, the guide and platoon leader exchange places by moving right shoulder to right shoulder. (FM 22-5, pars 69 and 79).

7. d. Machine gun section leader. The **"Leaders Rule"** pertains to overhead machine gun fire. (FM 23-55, par 186c).

8. The **"maximum effective rate of fire"** for a weapon is the greatest number of rounds that the average soldier can fire per minute and maintain accuracy.

The **"sustained rate of fire"** is the fastest rate at which the weapon can be fired for lengthy periods without overheating the barrel. (FM 23-15, par 5).

9. b. Squad diamond. (FM 7-10 par 56).

10. The **unit journal** is a record, maintained in chronological order, of events that affect the unit concerned (e.g., messages and orders transmitted or received by the headquarters, records of visits by higher commanders, etc.). This journal functions as the diary or biography of a unit. (FM 7-20, par 33).

Meet the authors

Gen Matthew B. Ridgway, whose address appears on page 6, is a familiar figure at the Infantry School, being a graduate of the Company Officers Course and the Advance Course. A U. S. Military Academy graduate, the General was appointed an Infantry officer in the Regular Army in 1917. In World War II, he led the famous 82d Airborne in North Africa and parachuted with the leading elements of his division into Normandy.

Following the war, he was appointed Deputy Supreme Allied Commander in the Mediterranean. He served on various United Nations committees, later becoming senior U. S. Army member of the U. N. Military Staff Committee.

In 1949, he became Deputy Chief of Staff for Administration, Department of the Army. He was transferred to the Far East Command and in December 1950 took command of the Eighth Army. In April 1951, he left 8th Army to become commander of the U. N. Command in the Far East, Commander-in-Chief of the Far East Command and Supreme Commander for the Allied Powers in Japan.

Eight years to the day after he parachuted with the 82d Airborne into France, General Ridgway returned to Europe as commander of SHAPE. In August of last year, he was named Chief of Staff of the U. S. Army by President Eisenhower.

Maj Gen M. Lentz, author of "Maintaining a Fighting Army" on page 84, was commissioned a second lieutenant in the Field Artillery Reserve in November 1917. In May of the next year he went to France with the 77th Field Artillery and served in the Toulon Sector and the Aisne-Marne, St. Mihiel, and Meuse-Argonne Offensives of WW I. He accepted a regular Army commission in 1920. In 1942 he was appointed plans and training officer of the Army Ground Forces and served in Europe during WW II as XII Artillery Corps commander.

Presently the Chief, Combat Arms Advisory Group, OCAFF, he has served as Chief of Staff of the 1st Infantry Division and later as Chief of Staff of the Seventh Army in Europe in 1950.

Master Sergeant Henry R. Sheridan, author of "Color Contour" (page 15), came into the Army in February 1943, and received his basic training at Camp Claiborne, Louisiana, and at the Desert Training Center in California and is a graduate of the Engineer Drafting School. During WW II, he served in Europe with the 1st European Civil Affairs Division. In 1951, he went to Korea and served as an operations sergeant in the S3 section of the 151st Combat Engineer Battalion. Shortly after returning to the States in 1952, he was assigned as an intelligence sergeant

with the Intelligence Group of The Infantry School.

Maj James Chrietzberg, Jr., author of "Fire Support for the Combat Patrol" on page 24, received a reserve commission upon graduation from the University of Alabama in 1941. He went to Korea in October 1950 where he served with the 24th Infantry (25th Div). He later returned to Japan but in August 1951 again sailed to Korea to serve with the 27th Inf until January 1952. Upon graduation from the Infantry Officer Advanced Course, Major Chrietzberg was assigned as an instructor with the Mortar Committee of the Weapons Department at TIS.

Capt Delmar A. Pugh, author of the "S1 Checklist" on page 32, was commissioned in OCS in 1942. He served with the 398th Infantry (100th Div) in Europe during WW II. and later with the 3d Division on occupation duty. He was returned to the States in 1946 and separated from the service. In 1948 he returned to serve with the 17th Airborne Division at Camp Pickett, Va. In 1949 he joined the 25th Division and went to Japan and Korea. He returned to the ZI in 1951 and was assigned to The Infantry School. A graduate of the Infantry Officer Advanced Class of 1944, Captain Pugh graduated from the Command and General Staff College in 1953. Upon graduation he returned to TIS where he is an instructor in the Personnel Group of the Staff Department.

SFC E. Lafayette Deal, whose article "Fight for Hill 148" appears on page 42, has spent the greater part of his adult life in the armed forces.

He served with the 82d Airborne Division until July 1950 when he was sent to Korea. There he served with the 187th Airborne Infantry until July 1952 when he returned to the ZI. He is now stationed at Fort Meade, Md.

Lt Ralph E. Ropp, author of "Operation Moonlight" on page 50, served as an enlisted man in the U. S. Marine Corps from 1946 to 1947. While attending Law School at Louisiana State University he received a reserve commission in the Infantry and was called to active duty in September 1952. Upon graduation from the Associate Company Officers Course at Fort Benning in January 1953, he was assigned to The Infantry School as the Assistant Editor of THE INFANTRY SCHOOL QUARTERLY.

Maj George Tassey, author of "Evasion" on page 56, served as an enlisted man from April 1943 until he graduated from Infantry OCS at Fort Benning in November 1944. He was integrated as a regular Army officer in July 1946, while in the Philippines. He fought in Korea with the 23d Infantry, 2d Division and returned to the States in June 1951, joining the Ranger Training Command. He is presently the executive officer of the Coordinating Group of the Ranger Department.

Captain Richard E. Cross, author of "Fighting Backwards" (page 62), is now assigned to the Airborne Department at TIS. Upon graduation from the Infantry OCS in 1945, he became an instructor in the Airborne Department. He has served with the 11th Airborne Division, the 82nd Airborne Division, and

the 1st Infantry Division. Captain Cross is a 1953 graduate of the Infantry Officers Advanced Course at TIS.

Captain Warren W. Drake, author of "Fighting in Forests," page 76, is a 1945 graduate of the U. S. Military Academy. After serving for two years in Luzon, P.I., he returned to the States in 1947 and became an Infantry platoon leader with the 38th RCT at Camp Carson, Colorado. In 1952 Captain Drake attended the Infantry Officer Advanced Course at Fort Benning. After graduation he was assigned to his present job as an instructor in The Infantry School's Automotive Department.

Lt Col Reginald E. Frizzelle was commissioned in the National Guard in 1935 and inducted into Federal Service in 1940. The author of "Tricks of the Trade" on page 93, he served as the Regimental S3 and S4 of the 137th Infantry (35th Div) in Europe during WW II. While in Korea he was first the Regimental S4 and later the Regimental Executive Officer of the 38th.

After his return to the United States in June 1951 he was assigned to The Infantry School. A 1943 graduate of the Command and General Staff School he is now the Chairman of "A" Committee of the Logistics Group of the Staff Department.

Cpl Norman S. Poser, now Mr. Poser, has his second feature article in THE QUARTERLY this month. "The Sunday Punch," on page 100, is the story of the mortar. It is a follow-up to "Fire Power Plus," the history of the machine gun, which appeared in the October QUARTERLY.

In the Near Future

✕ **"Small Arms Movie"** — In setting up our training programs, have we fully explored the field of motion pictures? Read this article and judge for yourself.

✕ **"Fire Support Planning"** — The plan is the thing. Here is the story of how careful planning can insure adequate fire support during an attack.

✕ **"The Case of the U. S. Sniper"** — Do we need sniper training today? Here are the thoughts of one man who believes we have a growing need for specialized sniper training.

✕ **"Keep Them Guessing"** — We must not allow our tactical thinking to become stereotyped. In this article a regimental commander discusses the matter of keeping tactical thinking elastic.

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